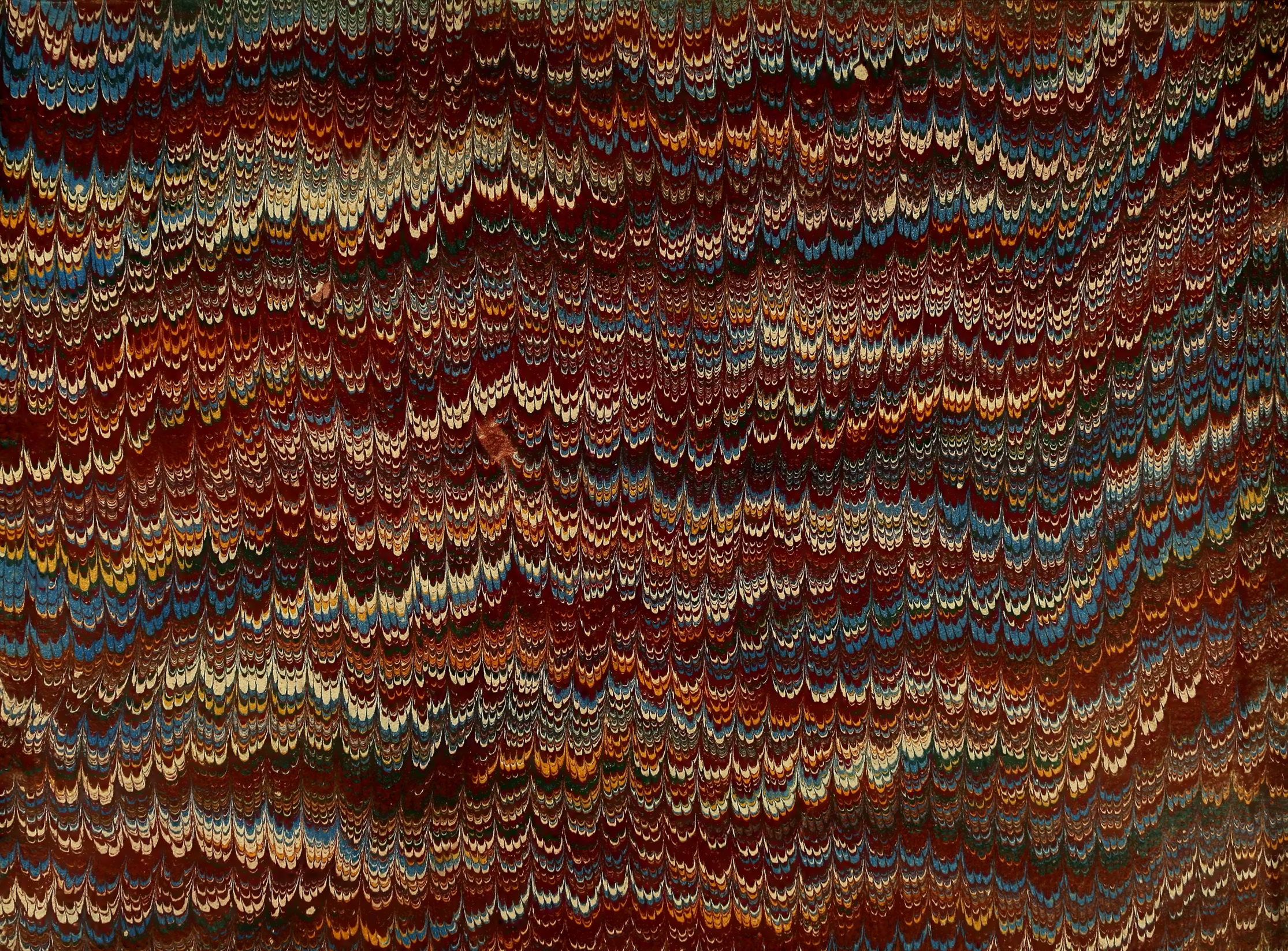
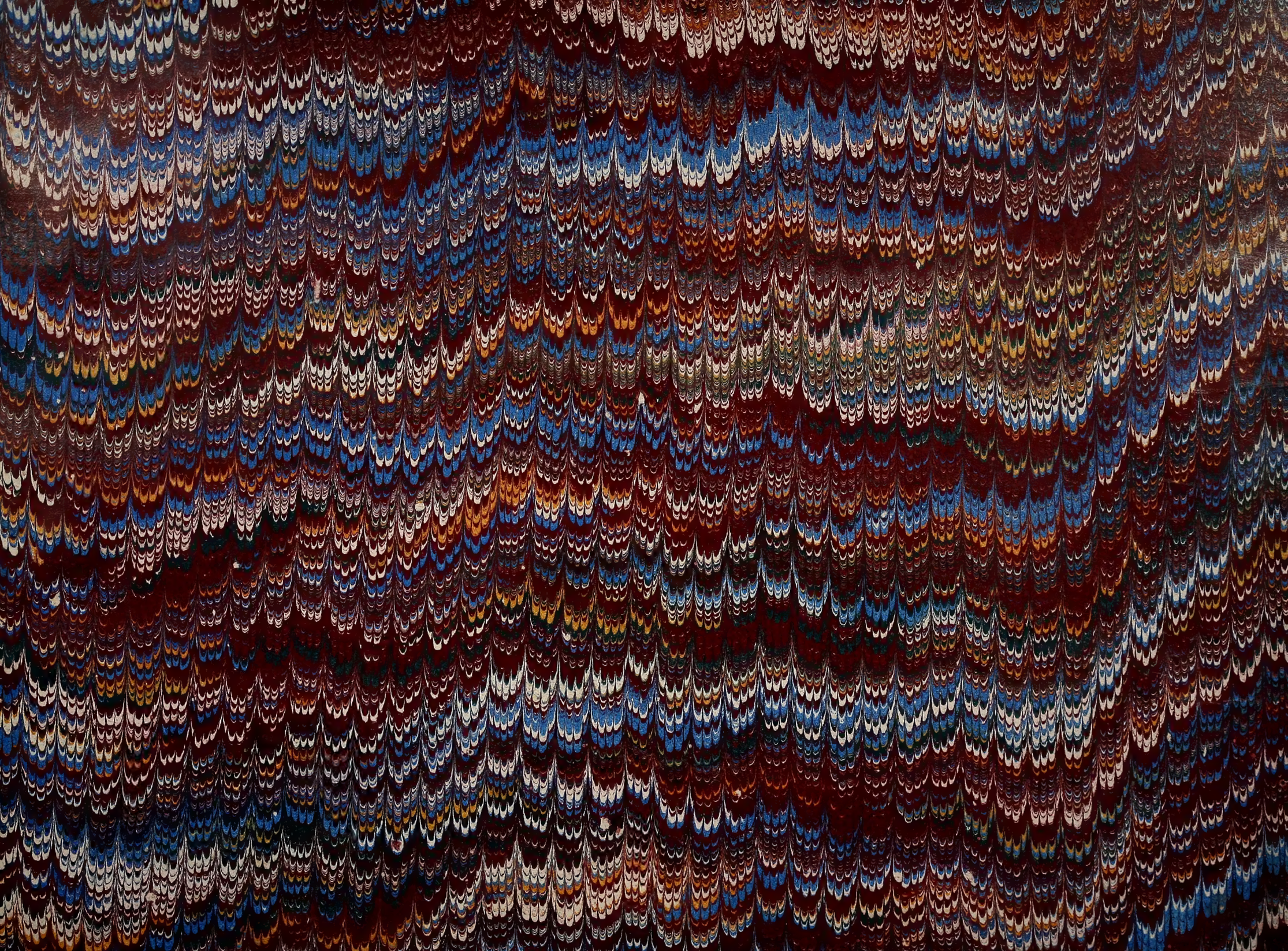




A HISTORY

OF

THE BIRDS OF EUROPE,

INCLUDING ALL THE SPECIES INHABITING THE

WESTERN PALÆARCTIC REGION.

BY

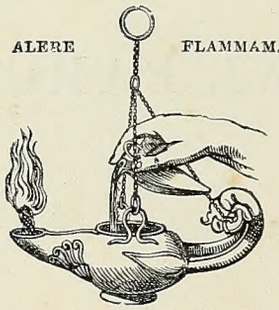
H. E. DRESSER, F.L.S., F.Z.S., ETC.

VOLUME III.

LONDON:
PUBLISHED BY THE AUTHOR,
6 TENTERDEN STREET, HANOVER SQUARE, W.

1871–1881.

ALERE FLAMMAM.



PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

A HISTORY OF THE BIRDS OF EUROPE



BY

HENRY E. DRESSER, F.L.S., F.Z.S., ETC.

VOLUME III.

CONTAINING:—

DRYMŒCINÆ. CRATEROPODINÆ. ACCENTORIDÆ.
PANURIDÆ. PARIDÆ. SITTIDÆ. CERTHIIDÆ.
TROGLODYTIDÆ. MOTACILLIDÆ. PYCNONOTIDÆ.
ORIOLIDÆ. LANIIDÆ. AMPELIDÆ. MUSCICAPIDÆ.
HIRUNDINIDÆ. FRINGILLINÆ (to Montifringilla).

QL
690
A1D77
1871
v. 3
copy 1
SCNHRB

LETTERPRESS TO VOL. III.

Genera and Species.	Date of publication.	Issued in Part	Pages in article.	Final paging.
23. CISTICOLA	1880	80	1	1
100. Cisticola cursitans	1877	61, 62	8	3–10
24. DRYMŒCA	1880	80	1	11
101. Drymœca gracilis	1879	75, 76	5	13–17
25. ARGYA	1880	80	1	19
102. Argya fulva	1875	45	2	21, 22
103. Argya squamiceps	1875	43, 44	3	23–25
26. ACCENTOR	1880	80	1	27
104. Accentor collaris	1873	17	5	29–33
105. Accentor montanellus	1875	43, 44	3	35–37
106. Accentor modularis	1873	21	7	39–45
27. PANURUS	1880	80	1	47
107. (Calamophilus) Panurus biarmicus	1871	3	12	49–60
28. ACREDULA	1880	80	1	61
108. Acredula rosea	1872	14	4	63–66
109. Acredula caudata	1872	14	6	67–72
110. Acredula irbii	1872	15	2	73, 74
111. Acredula tephronota	1872	14	2	75, 76
29. PARUS	1880	80	1	77
112. Parus major	1871	2	5	79–83
113. Parus ledouci	1872	11, 12	2	85, 86
114. Parus ater	1872	11, 12	6	87–92
115. Parus britannicus	1872	11, 12	5	93–97
116. Parus palustris	1871	5	8	99–106
117. Parus borealis	1872	11, 12	12	107–118
118. Parus camtschatkensis	1876	47, 48	2	119, 120
119. Parus lugubris	1872	11, 12	3	121–123
120. Parus cinctus	1871	6	5	125–129

Genera and Species.	Date of publication.	Issued in Part	Pages in article.	Final paging.
121. Parus cæruleus	1871	8	7	131–137
122. Parus teneriffæ	1871	8	3	139–141
123. Parus cyanus	1872	10	6	143–148
30. Lophophanes	1880	80	1	149
124. Lophophanes cristatus	1871	1	6	151–156
31. Ægithalus	1880	80	1	157
125. Ægithalus pendulinus	1876	53	5	159–163
126. Ægithalus castaneus	1876	51, 52	2	165, 166
32. Sitta	1880	80	1	167
127. Sitta europæa	1873	16	5	169–173
128. Sitta cæsia	1873	18	8	175–182
129. Sitta neumayeri	1872	14	5	183–187
130. Sitta krueperi	1872	13	3	189–191
33. Certhia	1880	80	1	193
131. Certhia familiaris	1874	29	9	195–203
34. Tichodroma	1880	80	1	205
132. Tichodroma muraria	1871	8	9	207–215
35. Troglodytes	1880	80	1	217
133. Troglodytes parvulus	1873	23, 24	9	219–227
134. Troglodytes borealis	1873	23, 24	2	229, 230
36. Motacilla	1880	80	1	231
135. Motacilla alba	1875	43, 44	6	233–238
136. Motacilla lugubris	1875	41, 42	5	239–243
137. Motacilla citreola	1875	38	4	245–248
Motacilla citreola. Appendix A	1875	45	2	249, 250
138. Motacilla melanope	1875	41, 42	9	251–259
139. Motacilla flava	1875	40	8	261–268
140. Motacilla viridis	1875	40	4	269–272
141. Motacilla melanocephala	1875	40	4	273–276
142. Motacilla raii	1875	40	5	277–281
37. Anthus	1880	80	1	283
143. Anthus pratensis	1874	27	6	285–290
144. Anthus bertheloti	1874	27	4	291–294
145. Anthus seebohmi	1875	45	4	295–298
146. Anthus cervinus	1874	25	10	299–308
147. Anthus trivialis	1874	27	8	309–316
148. Anthus campestris	1874	26	7	317–323

Genera and Species.	Date of publication.	Issued in Part	Pages in article.	Final paging.
149. Anthus richardi	1874	26	5	325–329
150. Anthus ludovicianus	1878	69, 70	4	331–334
151. Anthus spinoletta	1874	25	8	335–342
152. Anthus obscurus	1877	57, 58	7	343–349
38. Pycnonotus	1880	80	1	351
153. Pycnonotus barbatus	1875	39	3	353–355
154. Pycnonotus xanthopygus	1875	39	3	357–359
155. Pycnonotus capensis	1875	39	2	361, 362
39. Oriolus	1880	80	1	363
156. Oriolus galbula	1875	43, 44	8	365–372
40. Lanius	1880	80	1	373
157. Lanius excubitor	1871	2	6	375–380
158. Lanius lahtora	1872	11, 12	5	381–385
159. Lanius meridionalis	1871	9	4	387–390
160. Lanius algeriensis	1871	3	2	391, 392
161. Lanius minor	1872	13	6	393–398
162. Lanius collurio	1871	4	8	399–406
163. Lanius auriculatus	1871	1	6	407–412
164. Lanius isabellinus	1878	67, 68	4	413–416
165. Lanius nubicus	1871	2	4	417–420
41. Telephonus	1880	80	1	421
166. Telephonus erythropterus	1872	11, 12	4	423–426
42. Ampelis	1880	80	1	427
167. Ampelis garrulus	1873	23, 24	16	429–444
43. Muscicapa	1880	80	1	445
168. Muscicapa grisola	1875	45	5	447–451
169. Muscicapa atricapilla	1875	35, 36	6	453–458
170. Muscicapa collaris	1874	34	5	459–463
171. Muscicapa parva	1875	41, 42	6	465–470
44. Hirundo	1880	80	1	471
172. Hirundo savignii	1875	37	4	473–476
173. Hirundo rustica	1875	39	9	477–485
174. Hirundo rufula	1875	37	5	487–491
45. Chelidon	1880	80	1	493
175. Chelidon urbica	1875	40	7	495–501

Genera and Species.	Date of publication.	Issued in Part	Pages in article.	Final paging.
46. Cotile	1880	80	1	503
176. Cotile riparia	1874	32	7	505–511
177. Cotile rupestris	1874	28	7	513–519
178. Cotile obsoleta	1875	37	3	521–523
47. Carduelis	1880	80	1	525
179. Carduelis elegans	1877	60	6	527–532
48. Chrysomitris	1880	80	1	533
180. Chrysomitris citrinella	1877	63, 64	6	535–540
181. Chrysomitris spinus	1876	49	6	541–546
49. Serinus	1880	80	1	547
182. Serinus hortulanus	1875	43, 44	5	549–553
183. Serinus canonicus	1876	49	2	555, 556
184. Serinus canarius	1877	63, 64	4	557–560
185. Serinus pusillus	1876	55, 56	4	561–564
50. Ligurinus	1880	80	1	565
186. Ligurinus chloris	1875	45	5	567–571
51. Coccothraustes	1880	80	1	573
187. Coccothraustes vulgaris	1875	41, 42	7	575–581
52. Passer	1880	80	1	583
188. Passer italiæ	1876	47, 48	2	585, 586
189. Passer domesticus	1876	47, 48	6	587–592
190. Passer hispaniolensis	1876	47, 48	4	593–596
191. Passer montanus	1875	46	6	597–602
192. Passer simplex	1876	55, 56	2	603, 604
53. Petronia	1880	80	1	605
193. Petronia stulta	1877	59, 60	4	607–610
194. Petronia brachydactyla	1877	59, 60	3	611–613
54. Montifringilla	1880	80	1	615
195. Montifringilla nivalis	1876	47, 48	4	617–620

PLATES TO VOL. III.

No.	Plates.	Issued in Part
96.	Cisticola cursitans	61, 62
97.	Drymœca gracilis	75, 76
98.	Fig. 1, Argya fulva; fig. 2, A. squamata	45
99.	Accentor collaris	17
100.	Accentor montanellus	43, 44
101.	Accentor modularis	21
102.	Calamophilus biarmicus	3
103.	Acredula rosea	14
104.	Acredula caudata	14
105.	Fig. 1, Acredula irbii; fig. 2, A. tephronota	14
106.	Parus major	2
107.	Fig. 1, Parus ledouci; fig. 2, P. britannicus; fig. 3, P. ater	11, 12
108.	Parus palustris	5
109.	Figs. 1 & 2, Parus palustris; fig. 3, P. borealis	11, 12
110.	Parus camtschatkensis	47, 48
111.	Parus lugubris	11, 12
112.	Parus cinctus	6
113.	Figs. 1 & 2, Parus cæruleus; fig. 3, P. teneriffæ	8
114.	Parus cyanus	10
115.	Lophophanes cristatus	1
116.	Ægithalus pendulinus	53
117.	Ægithalus castaneus	51, 52
118.	Sitta europæa	16
119.	Sitta cæsia	18
120.	Sitta neumayeri (*Sitta syriaca* on Plate)	14
121.	Sitta krueperi	13
122.	Certhia familiaris	29, 30
123.	Tichodroma muraria	8
124.	Fig. 1, Troglodytes parvulus; fig. 2, T. borealis	23, 24
125.	Figs. 1 & 2, Motacilla alba; fig. 3, M. lugubris	47, 48
126.	Fig. 1, Motacilla alba; fig. 2, M. lugubris: winter dress	41, 42
127.	Motacilla citreola	38
128.	Motacilla melanope (*M. sulphurea* on Plate)	41, 42
129.	Figs. 1 & 2, Motacilla flava; fig. 3, M. viridis	40
130.	Motacilla melanocephala	40
131.	Motacilla raii	40
132.	Fig. 1, Anthus pratensis; fig. 2, A. trivialis	27
133.	Anthus bertheloti	27
134.	Anthus seebohmi	45
135.	Anthus cervinus (in winter)	29, 30
136.	Anthus cervinus (in summer)	25
137.	Anthus campestris	26
138.	Anthus richardi	26
139.	Anthus ludovicianus	71, 72
140.	Anthus spinoletta	25
141.	Anthus obscurus	57, 58
142.	Pycnonotus barbatus	39
143.	Fig. 1, Pycnonotus xanthopygus; fig. 2, Pycnonotus capensis	39
144.	Oriolus galbula	43, 44

No.	Plates.	Issued in Part
145.	Lanius excubitor	2
146.	Lanius lahtora	11, 12
147.	Lanius meridionalis	9
148.	Lanius algeriensis	3
149.	Lanius minor	13
150.	Lanius collurio	4
151.	Lanius auriculatus	1
152.	Lanius isabellinus	69, 70
153.	Lanius nubicus	2
154.	Telephonus erythropterus	11, 12
155.	Ampelis garrulus (*Bombycilla garrula* on Plate)	23, 24
156.	Muscicapa grisola	43, 44
157.	Muscicapa atricapilla (♀ and young)	35, 36
158.	Fig. 1, Muscicapa collaris; fig. 2, M. atricapilla	34
159.	Muscicapa parva	41, 42
160.	Fig. 1, Hirundo rustica; fig. 2, H. savignii	37
161.	Hirundo rufula	37
162.	Chelidon urbica	40
163.	Cotile riparia	35, 36
164.	Cotile rupestris	28
165.	Cotile obsoleta	37
166.	Carduelis elegans	40
167.	Chrysomitris citrinella (winter plumage)	45
168.	Chrysomitris citrinella (summer)	43, 44
169.	Chrysomitris spinus	49
170.	Serinus hortulanus	43, 44
171.	Serinus canonicus	49
172.	Serinus canarius	63, 64
173.	Serinus pusillus	55, 56
174.	Ligurinus chloris	43, 44
175.	Coccothraustes vulgaris	41, 42
176.	Fig. 1, Passer domesticus; fig. 2, Passer italiæ	47, 48
177.	Passer hispaniolensis	46
178.	Passer montanus	46
179.	Passer simplex	55, 56
180.	Fig. 1, Petronia brachydactyla; fig. 2, Petronia stulta	59, 60
181.	Montifringilla nivalis	47, 48

Subfamily *DRYMŒCINÆ*.

Genus CISTICOLA.

Sylvia apud Temminck, Man. d'Orn. i. p. 228 (1820).
Cisticola, Kaup, Natürl. Syst. p. 119 (1829).
Prinia apud Franklin, P. Z. S. 1831, p. 118.
Drymoica apud Swainson, Classif. of B. ii. p. 242 (1837).
Salicaria apud Keyserling & Blasius, Wirbelth. Eur. p. 55 (1840).
Caricicola apud C. L. Brehm, Vogelf. p. 237 (1855).
Calamanthella apud Swinhoe, Journ. N. China Br. As. Soc. May 1859.

Although the present genus in many respects approaches near to the true Aquatic Warblers, the species belonging to it differ so appreciably in habit, form, and mode of nidification as to fully justify generic separation. The *Cisticolæ* inhabit the southern portion of the Palæarctic Region as well as the Ethiopian and Oriental Regions, one species only (*Cisticola cursitans*) being found in the Western Palæarctic Region. It is a restless, active bird, frequenting grassy or bush-covered places, usually near water, and is a resident in the Western Palæarctic Region. It feeds chiefly on insects of various kinds, which it obtains both on the ground and on the bushes and grass. It flight is feeble and short; but it climbs with ease amongst the grass, reeds, and bushes. The nest is purse-shaped, and is fastened in the middle of a bunch of high grasses; and the eggs are pale blue or white, spotted with rufous. It is only a moderately good songster, and has a harsh, grating call-note.

Cisticola cursitans, the type of the present genus, has the bill rather stout, rather broad at the base, moderately long, decurved towards the tip; the nostrils basal, oval; gape furnished with a few short bristles; wings moderately long, first quill short, but considerably longer than the coverts, second shorter than the seventh, the third, fourth, fifth, and sixth nearly equal; tail moderately long, much graduated; tarsus long, covered in front with five plates and three inferior scutellæ; feet moderate; general plumage loose, spotted.



J.G.Keulemans lith.

M.& N.Hanhart imp

FANTAIL WARBLER.

CISTICOLA CURSITANS.

CISTICOLA CURSITANS.

(FANTAIL WARBLER.)

Sylvia cisticola, Temm. Man. d'Orn. i. p. 228 (1820).
Cisticola, Kaup (*Sylvia cisticola*, Temm. Natürl. Syst. p. 119 (1829).
Cysticola cisticola (Temm.), Less. Traité d'Orn. p. 415 (1831).
Prinia cursitans, Frankl. P. Z. S. 1831, p. 118.
Drymoica cisticola (Temm.), Swainson, Classif. of Birds, ii. p. 242 (1837).
Cysticola schœnicola (Temm.), Bp. Comp. List, p. 12 (1838).
Salicaria cisticola (Temm.), Keys. & Blas. Wirbelth. Eur. p. 55 (1840).
Cisticola cursitans (Frankl.), Blyth, J. As. Soc. Beng. xi. p. 884 (1842).
Drymoica uropygialis, Fras. P. Z. S. 1843, p. 17.
Prinia subhimalayana, Blyth, J. A. Soc. Beng. xiii. p. 377 (1844).
Prinia cysticola (Temm.), Blyth, tom. cit. p. 377 (1844).
Drymoica terrestris, Smith, Ill. Zool. S. Afr., Aves, pl. 74. fig. 2 (1849).
Salicaria (*Cisticola*) *brunniceps*, Temm. & Schl. Faun. Japon. p. 134, pl. xx. *c* (1850).
?*Cisticola homalura*, Blyth, J. As. Soc. Beng. xx. p. 176.
Caricicola cisticola (Temm.), C. L. Brehm, Vogelfang, p. 237 (1855).
Cisticola arquata, V. Müll. J. f. Orn. 1856, p. 223.
Calamanthella tintinnabulum, Swinh. Journ. N. Chin. Branch As. Soc. May 1859.
Cisticola tintinnabulans, Swinh. Ibis, 1860, p. 51.
Cisticola ayresii, Hartl. Ibis, 1863, p. 325, pl. 8.
Cisticola europæa, Hartl. tom. cit. p. 325.
Cisticola terrestris (Smith), Sharpe, Cat. Afr. B. p. 29. no. 273 (1871).
Cisticola munipurensis, Godw.-Aust. P. Z. S. 1874, p. 47.

Bec-fin cisticole, French; *Bolsicon*, *Tin-tin*, Spanish; *Beccamoschino*, Italian; *Cistenrohr-sänger*, German.

Figuræ notabiles.

Temminck, Pl. Col. 6. fig. 3; Werner, Atlas, *Insectivores*, pl. 59; Gould, B. of Eur. pl. 113; Temm. & Schl. Fauna Japon. pl. 20*c*; Smith, *l. c.*

♂ *ad.* pileo, dorso et tectricibus alarum nigricantibus, cervino rufescente striatis: uropygio et supracaudalibus rufescenti-cervinis, indistinctè nigro notatis: remigibus nigro-fuscis, extùs angustè cervino marginatis, secundariis intimis dorso concoloribus: rectricibus centralibus nigro-fuscis, pallidè fusco marginatis, reliquis fuscis, versus apicem vittâ nigrâ notatis, externis albo terminatis: corpore subtùs albo, pectore cervino et hypochondriis et subcaudalibus sordidè rufescenti lavatis: rostro fusco-corneo, ad basin flavicante: iride fuscâ: pedibus fusco-corneis.

♀ *ad.* mari similis.

Juv. adulto similis sed ubique magis rufescens: corpore subtùs rufescenti-ochraceo lavato.

Adult Male (Corsica, 30th April). Crown, back, wing-coverts, and upper parts generally black, broadly striped with warm buff, the ground-colour of the feathers being black and the margins warm buff; rump and upper tail-coverts rufous buff, slightly marked with black; quills blackish brown, externally narrowly margined with warm buff, the inner secondaries marked like the back; central rectrices blackish brown, broadly margined with light brown, the rest of the tail-feathers dark brown, terminated with a blackish patch, the lateral ones with a final broad white termination; underparts white, the breast washed with buff, and the flanks and under tail-coverts with dull rufous; bill horn-brown, yellowish at the base; iris brown; legs brownish flesh-colour. Total length about 4·25 inches, culmen 0·48, wing 1·9, tail 1·85, tarsus 0·75.

Adult Female (Smyrna). Does not differ from the male in plumage.

Young (Sardinia). Resembles the adult, but the entire plumage is much more rufous, and the underparts are washed with rufescent ochreous.

Obs. Examples of this species from different localities, as well as from the same locality, differ not a little, some being much paler and greyer, and others more rufous and darker; and some have the head darker and less striped than others. One, in particular, from Corsica has the head dark brown with scarcely any markings on the fore part of the crown. In order to show the variation in colour I have figured a very grey adult male from Smyrna and a rather reddish-coloured bird from Sardinia, both of which are in my collection. In the breeding-season the old male is said to have the gape of a purple colour, and the female yellowish flesh; and the sexes may then be distinguished by this difference in the coloration of the gape.

The variation in size in specimens of *Cisticola cursitans* from different localities is not very great. I have measured almost the entire series I have examined, and find that examples from Europe vary as follows—culmen 0·45–0·48 inch, wing 1·9–2·0, tail 1·8–1·85, tarsus 0·75–0·8; those from Africa—culmen 0·42–0·46 inch, wing 1·85–2·0, tail 1·5–1·7, tarsus 0·75–0·78; those from India—culmen 0·44–0·48 inch, wing 1·9–2·09, tail 1·65–1·8, tarsus 0·7–0·8; and those from China—culmen 0·45–0·48 inch, wing 1·9–2·0, tail 1·65–1·8, tarsus 0·75–0·8.

A COMMON species in Southern Europe, the present bird is also found far south in Africa, and in Asia as far east as China. Both in Africa and in Asia there are not a few tolerably closely allied species; but in Europe there is certainly only the one form, subject to some variation, which inhabits the Mediterranean region from west to east, not ranging into Central or Northern Europe.

In France it is confined to the southern districts, being very numerous in the marshy portions of the Camargue, and in similar localities along the Mediterranean. M. Adrien Lacroix records it from the French Pyrenees, where, he says, it arrives in April and leaves in September. In Portugal it is stated to be tolerably common. Mr. Saunders informs me that it is very common in Southern and Eastern Spain, as far north as the Ebro, but he did not observe it in Catalonia; nor did I ever meet with it when collecting there. Colonel Irby says that he found it common and resident near Gibraltar, and very common in the winter. Mr. Saunders remarks that it has several names in Spanish, being called *Bolsicon* on account of its purse-shaped nest, *Tin-tin* from its sharp note, and *Chispita* (*i. e.* little spark) from its rapid quick flight.

Mr. A. von Homeyer states that it is common in the Balearic Islands, especially in Majorca, where he found it less numerous in the marshes of Albufera and on the Prat than in the corn-fields, in which localities he met with it near Palma, not far from the coast. In Minorca he frequently observed it near Port Mahon in the corn-, tobacco-, and hemp-fields in a very mountainous locality, which, he says, rather surprised him. In Italy it is said by Salvadori to be found in the Roman territory, Tuscany, Modena, Liguria, and Lombardy, not so commonly in Piedmont and Venetia, and common and resident in Sicily and Sardinia, but not found in Malta. Mr. C. Bygrave Wharton met with it in Corsica; and Mr. A. B. Brooke, referring to its occurrence in Sardinia, says that he found it extremely numerous about the large marshy swamps in the neighbourhood of Oristano, where they breed; and it is, he adds, to be found, but more sparingly, in all suitable localities.

In Greece, Dr. Krüper says, it is found throughout all swampy districts, and is to be met with at all seasons of the year. In Acarnania he observed it in the wheat-fields. It raises two, or even three, broods in the year. It is also resident in the Cyclades.

I do not find it recorded from Southern Germany or Turkey; but it appears to be common and is said to be resident in Asia Minor. Canon Tristram says (Ibis, 1867, p. 77), it "rejoices in the moist maritime plains of Palestine, where we found it all the year round, starting up from the long grass in front of our horses, jerking up in the air for a few seconds as it rapidly repeated its single note *pink*, *pink*, and then dropping suddenly again, when it was very difficult to put it up a second time."

In Africa it has a very wide distribution. Captain Shelley speaks of it as being one of the most abundant birds in Egypt and Nubia; and Von Heuglin writes (Ibis, 1869, p. 133) as follows:—"This species is a permanent resident in Egypt, Nubia, and Northern Arabia, goes southwards to Abyssinia, and probably also to Sennaar, and certainly does not live among sedges, but chiefly in clover- and wheat-fields, in meadows and acacia and date-palm thickets, especially when these are overgrown by climbing plants and grass, in gardens, and also far from the cultivated land, close upon the borders of the desert." It is, according to Messrs. Layard and Sharpe, found down to South Africa. It occurs in Algeria, where Canon Tristram and Mr. Taczanowski met with it; and Baron J. W. von Müller, who found it near Philippeville, Constantine, Bône, &c., separates the Algerian species from our European bird under the name of *Cisticola arquata* on account of its curved bill; but I cannot think that this distinction holds good. According to Favier (*fide* Col. Irby, Orn. Str. Gibr. p. 91) "this is the most common of the aquatic Warblers around Tangier, and is seen migrating in lots of from ten to twelve during March and April, returning in October, November, and December. Many remain to breed, nesting twice in the season." It is found in many parts of West Africa. Mr. Ussher sent specimens from the Volta; and it was obtained by Du Chaillu at Cape Lopez and on the Camma river. Mr. Andersson says (B. of Damara L. p. 88) that it came under his notice in Great Namaqua Land in about 24° or 25° S. lat., and he also met with it abundantly in Southern Damara Land, and obtained it in Ondongo, and it was most common at some large waters on the Omaruru river. Specimens from Damara Land were, he adds, of a lighter tint than those from Ondonga. Messrs. Layard and Sharpe (B. of S. Afr. 2nd ed. p. 276) say that it was found abundantly by Mr. Atmore in the George District, in S. Africa, by Major Bulger at Wind-

vogelberg, by Lieutenant H. Trevelyan at King William's Town, and by Mr. Atmore at Eland's post. Mr. Ayres and Mr. T. E. Buckley found it common throughout Natal and in the Transvaal.

To the eastward the Fantail Warbler is found as far as China and Japan. Severtzoff did not meet with it in Turkestan; nor does Mr. Blanford record it from Persia; but it is, Dr. Jerdon states, distributed throughout India, where it is found in long grass, corn-, and rice-fields. Mr. Holdsworth records it as common in Ceylon, and puts as a synonym *Cisticola homalura*, Blyth: and in this he is probably correct; for Mr. Hume states (Stray Feathers, i. p. 439) that he has Indian specimens which would answer very well to Blyth's diagnosis. Mr. Hume records it from the Nicobars, and writes (Stray Feathers, ii. p. 235), "I have compared the Nicobar bird with others from all parts of India, from Ceylon on the south to Goorgaon on the north, and from Sindh on the west to Decca and Cachar on the east; and they appear to me to be perfectly identical. Davison says, 'Comparatively common at the Nicobars in the large tracts of grass that occur on many of these islands, it is also very abundant, perhaps more so than in any other locality, all about the cleared portion of the settlement of Camorta, frequenting the patches of guinea-grass and low scrub that cover the hill-sides where forest has been felled and burned.'" Messrs. Finsch and Hartlaub say that there is a specimen in the Bremen Museum from Java. According to Mr. Swinhoe it is found commonly throughout China, Hainan, and Formosa; and he also identifies the Japanese bird with the present species. I have not been able to compare a specimen from Japan; but it appears to me from the plate and description in the 'Fauna Japonica' that Mr. Swinhoe is correct in his identification.

Owing to the want of a sufficient series of specimens, I have found it difficult to determine the validity of the various closely allied species from Asia. I am indebted to the Marquis of Tweeddale for his entire series of specimens from India &c., and to Mr. Swinhoe for his Chinese examples, and have examined the collection in the British Museum; and the following remarks, being the result of what I have been able to ascertain by an examination of these specimens, may perhaps be of interest to my readers:—

Cisticola munipurensis, from the Naga hills, is, judging from a specimen in Lord Tweeddale's collection, not specifically separable from *Cisticola cursitans*.

Cisticola melanocephala, Anderson (P. Z. S. 1871, p. 212), from Yunnan, differs from *C. cursitans* in being darker on the upper parts and in having the crown blackish brown. There is a specimen in Lord Tweeddale's collection, from the Khasi hills, which measures—culmen 0·4, wing 1·82, tail 1·95, tarsus 0·7.

Cisticola ruficollis, Walden (Ann. & Mag. Nat. Hist. ser. 4, vol. vii. p. 241, 1871). I have not had an opportunity of examining this species, which is said to occur throughout all Assam; but Lord Tweeddale says that it is very distinct, and in its style of coloration greatly resembles *Graminicola bengalensis*, Jerd.

Cisticola volitans, Swinh. (Journ. N. China B. As. Soc. May 1859), from North Formosa, differs from *C. cursitans* in being paler and in having the crown light creamy isabelline, and the rump darker isabelline, both being unspotted. The type (in Mr. Swinhoe's collection) measures—culmen 0·42, wing 1·7, tail 1·1, tarsus 0·77.

Cisticola grayii, Walden (Ann. & Mag. Nat. Hist. ser. 4, vol. ix. p. 400, 1872), from Celebes,

resembles *C. volitans*, but has the crown pale rufescent ochreous, and the rump rather darker, both unmarked. The type (in Lord Tweeddale's collection) measures—culmen 0·45, wing 1·8, tail 1·4, tarsus 0·8.

Dr. Cabanis gives (J. f. O. 1866, p. 10), without description, as a new species, *Cisticola semirufa*, from Luzon and Jagor, and he writes (J. f. O. 1872, p. 316) that it "seems to replace the Australian *C. ruficeps*, Gould, which it much resembles, but is less in size, and more rufous in coloration on the underparts."

In Lord Tweeddale's collection there is a specimen from the island of Bouru, obtained by Mr. A. R. Wallace, and labelled *Cisticola rustica*, Wallace. This bird is more rufous in coloration than *C. cursitans*, especially on the underparts; but otherwise it does not differ from it, and it is, on the whole, rather a doubtful species. The specimen in question measures—culmen 0·45, wing 1·7, tail 1·62, tarsus 0·77.

Cisticola fuscicapilla, Wallace, from the island of Flores, differs from *C. cursitans* in being much greyer, and in having the upper parts less marked, the crown and rump being entirely unmarked, the former being dull brownish. Three examples in Lord Tweeddale's collection measure—culmen 0·48, wing 1·9–1·95–2·0, tail 1·68–1·8–1·85, tarsus 0·78–0·8.

Cisticola exilis (Lath.), from Australia, is very closely allied to *Cisticola cursitans*; and, judging from the specimens I have examined, it differs in having the sides of the head and the hind neck rufous, being otherwise like our European bird. One specimen in Lord Tweeddale's collection so closely resembles European examples that I am doubtful as to whether the Australian bird should not be united with the Indian and European species. This specimen measures—culmen 0·45, wing 1·70, tail 2·0, tarsus 0·77. According to Mr. Gould (Handb. B. Austral. i. p. 350) *Cisticola exilis* inhabits New South Wales and South Australia, where it is abundant.

Besides *Cisticola exilis*, Gould discriminates three allied forms of *Cisticola* which inhabit Australia, viz.:—*C. lineocapilla*, which inhabits the neighbourhood of Port Essington, in North Australia, and which, he says, is a much smaller and more delicately formed species than *C. exilis*, and may be distinguished by the lineated form of the markings of the head; *Cisticola ruficeps*, which has the crown, hind neck, rump, chest, flanks, and thighs delicate fawn-colour, being deeper and redder on the crown and rump, and which has a wide range in Australia; and *Cisticola isura*, which he includes with doubt as being distinct from *C. ruficeps*, from which it is distinguished by a shorter tail. He obtained it from the same localities as *C. ruficeps*.

I have not deemed it necessary to enter into details respecting the various allied species of *Cisticolæ* inhabiting Africa, as Von Heuglin and Messrs. Layard and Sharpe have entered so fully into details respecting these; I may, however, mention that *Cisticola madagascariensis*, from Madagascar, appears to me to be fairly distinct. I have examined specimens, and find them larger and much greyer on the upper parts than *Cisticola cursitans*, and they have but little trace of rufous in the plumage.

The present species inhabits not only marshy localities but grass-covered plains, fields, and places covered with tangled herbage. Mr. J. H. Gurney, jun., informs me that when disturbed it rises angrily into the air, going straight up with a jerky flight, and uttering its note loudly. Von Heuglin, speaking of its habits, writes (Orn. N.O.-Afr. i. p. 268) that it is usually found in pairs in the clover- and wheat-fields, in *Arundo*-hedges, on pastures, in acacia and date-bushes,

especially when these latter are overgrown with creepers, and the ground is covered with dense grass; and it also occurs in gardens, alongside of ditches, and far from cultivation to the very edge of the desert. Not unfrequently several pairs inhabit a small place, which they rarely quit. This species lives much hidden, though it is not, strictly speaking, shy, and is usually seen in tangled places close to the ground, and descends not unfrequently to the ground, where it runs with ease amongst the grass. Only the male, when singing, will show itself on an exposed twig or a long grass-stem standing apart from the rest. The song is rather poor than otherwise, and the call-note is a harsh *teck teck*. During the breeding-season the male will often fly round the place where the nest is and ascend into the air, like the Whitethroat, describing circles, flying low, with a jerky fluttering flight, and continually uttering its call-note.

The food of the present species consists chiefly of small insects and their eggs; and Brehm says that the indigestible portions of their food, which he found chiefly to consist of minute beetles, *Diptera*, caterpillars, and small snails, are cast up in the form of pellets.

Nidification commences in North Africa in March, and in Southern Europe a little later, and two or even three broods are in some countries raised in one year. I have received several nests from Spain, all purse-shaped, neatly made of thistle-down and plant-cotton, interwoven with bits of grass, and closely worked to the grass stems amongst which they are built.

Von Heuglin gives (*l. c.*) the following description of its breeding-habits in North-east Africa:—"This bird probably breeds in wheat- and clover-fields; but I found its nests only in date-palm groves and low thorn-hedges; they were placed from one to two feet above the ground, and were from $4\frac{1}{2}''$ to $6''$ high, the deep cavity of the nests being $2''$ to $2\frac{1}{2}''$ in diameter. The entire structure is not very thick and solid; the form is governed by the locality, and more or less approaches that of the Reed-Warbler, but is sometimes rather more bulging in the middle. The nest never hangs freely, like a purse-nest, but it is interwoven with leaf-sheaths, thorns, twigs, and even grass-stalks, and composed of fine dry grass and rootlets. The interior is carefully lined with wool, hair, and fibres. The four vividly reddish-white very thin-shelled eggs exhibit numerous ferruginous spots and points, which are usually brought together into the form of a ring at the obtuse end so closely that the ground-colour entirely disappears. There are also some with a greenish white ground and light violet and rusty red points and spots. Their form is obtusely oval, their length being from $6'''$ to $6\frac{1}{4}'''$, and their breadth only $5'''$. On the 27th June I found three nests in Central Nubia, one of which contained two young birds and two unincubated eggs, the second two incubated and the same number of unincubated, and the third two fresh-laid eggs."

Mr. A. O. Hume, in his work on the nests and eggs of Indian birds, has published some notes on the nidification of the present species, from which I transcribe the following, viz.:—"The Rufous Grass-Warbler, as Jerdon calls it, breeds pretty well all over India and Ceylon, confining itself, as far as my experience goes, to the low country, and never ascending the mountains to any great elevation. The breeding-season lasts, according to locality, from April to October; but it never breeds with us in dry weather, always laying during rainy months. Very likely, at the Nicobars, where it rains pretty well all the year round, March being the only fairly dry month, it may breed at all seasons. I have myself taken several, and have had a great many nests sent to me. With rare exceptions all belonged to one type. The bird selects

a patch of dense fine-stemmed grass, from 18 inches to 2 feet in height, and, as a rule, standing in a moist place; in this, at the height of from 6 to 8 inches from the ground, the nest is constructed; the sides are formed by the blades or stems of the grass, *in situ*, closely tacked and caught together with cobwebs and very fine silky vegetable fibre. This is done for a length of from 2 to nearly 3 inches, and, as it were, a narrow tube, from 1·0 to 1·5 in diameter, formed in the grass. To this a bottom, from 4 to 6 inches above the surface of the ground, is added, a few blades of the grass being bent across, tacked and woven together with cobwebs and fine vegetable fibre. The whole interior is then closely felted with silky down, in Upper India usually that of the Mudar (*Calotropis hamiltoni*). The nest thus constructed forms a deep and narrow purse, about 3 inches in depth, an inch in diameter at the top, and 1·5 at the broadest part below. The tacking together of the stems of the grass is commonly continued a good deal higher up on one side than on the other; and it is through or between the untacked stems opposite to this that the tiny entrance exists. Of course above the nest the stems and blades of the grass, meeting together, completely hide it. The dimensions above given are those of the interior of the nest; its exterior dimensions cannot be given. The bird tacks together not merely the few stems absolutely necessary to form a side to the nest, but most of the stems all round, decreasing the extent of attachment as they recede from the nest-cavity. It does this too very irregularly; on one side of the nest perhaps no stem more than an inch distant from the interior surface of the nest will be found in any way bound up in the fabric, while on the opposite side perhaps stems fully 3 inches distant, together with all the intermediate ones, will be found more or less webbed together. Occasionally, but rarely, I have found a nest of a different type. Of these one was built amongst the stems of a common prickly labiate marsh-plant which has white and mauve flowers. There was a straggling framework of fine grass, firmly netted together with cobwebs, and a very scanty lining of down. The nest was egg-shaped, and the aperture on one side near the top. Mr. Brooks, I believe, once found a similar one; but the vast majority of the others that any of us have ever got have been of the type first described, which corresponds closely with Pässler's account. Five is the usual complement of eggs; at any rate I have notes of more than a dozen nests that contain this number; and in more than half the cases the eggs were partly incubated. I have no record of more than five; and though I have any number of nests containing one, two, three, and four eggs, yet these latter in almost all cases were fresh."

The eggs of the Fantail Warbler run into several varieties, two of which appear to be equally common in Europe—viz. pale blue spotted with rufous and pure white, also spotted with rufous. Besides these I possess one egg of a third variety, viz. pale blue entirely unspotted, but have never seen any specimens of a fourth variety which is said to occur, viz. pale pink unspotted. In the blue spotted eggs in my collection the spots are of a dull light-red colour, and are more profuse towards the larger end; and the white eggs are spotted with lighter and darker red, the spots being in these also more profuse at the larger end. In size the eggs of this Warbler vary from $\frac{24}{40}$ by $\frac{17}{40}$ to $\frac{25}{40}$ by $\frac{19}{40}$ inch.

The specimens figured are a pale greyish adult male, from Smyrna, and a rufous example from Sardinia.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. South Europe. *b*, ♂, *c*, ♀, *d*. Bastia, Corsica, April 30th, 1875 (*C. B. Wharton*). *e, ad., f, pull.* Sardinia (*Salvadori*). *g*, ♂. Acarnania, December 19th, 1868 (*Dr. Krüper*). *h*. Smyrna, July 20th. *i*. Smyrna, July 21st, 1871 (*Dr. Krüper*). *k*. Smyrna, July 29th, 1871. *l*. Smyrna, May 24th, 1874 (*Dr. Krüper*). *m*. Syria (*Rogers*). *n*. N. Africa (*J. H. Gurney, jun.*). *o, p*. Egypt (*G. E. Shelley*). *r*, ♀. Damietta, May 7th, 1863 (*G. E. Shelley*). *s*. Fantee, 1870. *t*. Cawnpore, India, April 29th, 1869 (*Marshall*).

E Mus. Lord Tweeddale.

a. Gaboon. *b*, ♂. Shillong, May 29th. *c*, ♂. Dunsiri valley, Naga hills (*Godwin-Austen*), *c*. Dacca. *d*. Bengal. *e, f, g, h*. Maunbhoom, March 1864. *i*. Formosa, March 1856 (*R. Swinhoe*). *k*. Togian Islands (*Dr. Meyer*).

E Mus. Brit. Reg.

a. Villacedro, Spain. *b, c*. Oristano, Sardinia. *d*. Africa. *e*. Cape Coast. *e, f, g, h, i*. Riva Volta. *k, l, m*. Damara Land. *o, p*. Ondonga. *r, s*. Accra. *t, u*. Elands Post. *v, w*. Transvaal. *x, y*. Pinetown. *z*. Zanzibar. *aa*. Nepâl. *ab, ac*. Madras.

E Mus. R. Swinhoe.

a, b, c, d. Formosa, March and April (*R. S.*). *e*, Shanghai. *f*. Hainan, February 1868 (*R. S.*).

E Mus. Howard Saunders.

a, ♂ *ad.* (from nest). Valencia, April 7th. *b, c*, ♀ (from nests). Malaga, July 8th. *d*, ♂ (from nest). Malaga, July 13th. *e*, ♂. Malaga, July 11th. *f*, ♂ *juv.* Valencia, November 23rd. *g*, ♂, *h*, ♀. Palermo, Sicily (*Doderlein*). *i, juv.* Smyrna, July 20th (*Krüper*).

Genus DRYMŒCA.

Sylvia apud Lichtenstein, Verz. Doubl. p. 34 (1823).
Malurus apud Cretzschmar, in Rüpp. Atlas, Vögel, p. 3 (1826).
Drymoeca, Swainson, Zool. Journ. iii. p. 168 (1827).
Cysticola apud Lesson, Traité d'Orn. p. 415 (1831).
Prinia apud Blyth, Journ. As. Soc. Beng. xiii. p. 376 (1844).
Drymoica apud Rüppell, Syst. Uebers. p. 56 (1845).
Suya apud Bonaparte, Consp. Gen. Av. i. p. 281 (1850).
Burnesia apud Jerdon, B. of India, ii. p. 185 (1863).
Drymæca apud Blanford, Geol. & Zool. of Abyss. p. 373 (1870).

The present genus, which is closely allied to *Cisticola*, is found in the extreme south-eastern portion of the Western Palæarctic Region, but is more essentially an Ethiopian and Indian genus, though the single species which is found within our limits is resident. In habits it assimilates tolerably closely to *Cisticola*; and, like those birds, it is usually found in well-watered or damp localities. It is a tolerably good songster; but its song, though sweet, is somewhat short. Its flight is weak and uncertain; and it seldom traverses any considerable distance without resting. Its food consists chiefly of insects of various kinds, which it obtains either amongst the bushes or low trees or on the ground; and its nest, unlike that of the *Cisticolæ*, is domed, having an entrance in the side, and is deep, almost purse-shaped, and large for the size of the bird. It is built suspended above the ground in a bunch of grass; and the eggs are speckled with deep red on a pale greenish ground. The type of the present genus is *Drymæca maculosa* (Bodd.), an African species not found in the Western Palæarctic Region; so I give the characters of the single species which occurs here, and which is congeneric with it (*Drymæca gracilis*), as follows, viz.:—Bill somewhat slender, rather broad at the base, moderately long, decurved towards the tip; nostrils basal, oval; gape furnished with tolerably long bristles; wings short, broad, first quill well developed, half the length of the second, which is about equal to the ninth, third and fourth nearly equal, the latter being the longest; tail very long, much graduated, consisting of ten rectrices; tarsi long, covered in front with four plates and three inferior scutellæ; feet moderate, claws rather short, curved.



J.G.Keulemans lith.

Hanhart imp

STREAKED WREN WARBLER.

DRYMÆCA GRACILIS.

DRYMŒCA GRACILIS.

(STREAKED WREN WARBLER.)

Sylvia gracilis, Licht. Verz. Doubl. p. 34 (1823).
Sylvia textrix, Audouin, Expl. somm. Pl. Ois. de l'Egypte, p. 277 (1825, nec Vieill.).
Malurus gracilis (Licht.), Cretzsch. in Rüpp. Atlas Vögel, p. 3 (1826).
Cysticola (Licht.), Less. Traité d'Orn. p. 415 (1831).
Prinia lepida, Blyth, Journ. As. Soc. Beng. xiii. p. 376 (1844).
Drymoica gracilis (Licht.), Rüpp. Syst. Uebers. p. 56 (1845).
Drymoica lepida, Blyth, Journ. As. Soc. Beng. xvi. p. 460 (1847).
Suya lepida (Blyth), Bp. Consp. Gen. Av. i. p. 281 (1850).
Burnesia lepida (Blyth), Jerd. B. of Ind. ii. p. 185 (1863).
Suya gracilis (Licht.), Adams, Ibis, 1864, p. 17.
"*Prinia gracilis*, Rüpp.," Adams, ut suprà.
Drymœca gracilis (Licht.), Blanf. Geol. & Zool. of Abyss. p. 373 (1870).

Figuræ notabiles.

Rüpp. Atlas, tab. 2. fig. *a*; Temm. Pl. Col. 466. fig. 1; Savigny, Ois. de l'Egypte, pl. 5. fig. 4; Gould, B. of Asia, part vii.

♂ *ad.* suprà olivaceo-cinerascens umbrino tinctus, nigricanti striatus, subtùs sericeo-albus, hypochondriis brunneo-cervino lavatis: remigibus et rectricibus fuscis, illis olivaceo-cinereo marginatis: caudâ elongatâ, gradatâ, delicatissimè fasciolatâ, pallidiore terminatâ et fasciâ anteapicali nigricante notatâ: rostro plumbeo-corneo, mandibulâ versus basin incarnatâ: iride flavo-fuscâ: pedibus rubello-flavicantibus.

Adult Male (Adalia, 18th December). Upper parts olivaceous grey with a brown tinge, each feather with a broad blackish brown central streak, these streaks being broader on the crown and dorsal region, the rump being scarcely marked; quills blackish brown, margined with warm olivaceous grey; tail brown above, obsoletely banded with narrow transverse lines, below paler than above, with lighter tips and a dark subterminal band to the feathers; underparts silky white with obsolete streaks on the throat; the flanks washed with pale warm buff; bill plumbeous, the lower mandible flesh-coloured, except at the tip; iris light yellowish brown; legs fleshy yellow. Total length about 5 inches, culmen 0·4, wing 1·7, tail 2·85, tarsus 0·7.

Adult Female (Adalia). Undistinguishable from the male in colour.

This interesting little bird, which is quite common in North-east Africa and India, only just comes within the scope of the present work; for the only portion of the Western Palæarctic Region it inhabits is Asia Minor, where it is said to be resident and common in some parts; and it certainly breeds numerously in Palestine. In a letter from Dr. Krüper written some time

ago, this gentleman says, "I am sure that this Warbler occurs at Smyrna; and both this year and eight years ago I observed a Warbler on some high trees in the Torbali cemetery which I believe to have been *Drymœca gracilis*. Near Beyrout it is resident and not uncommon." Mr. Danford obtained several specimens in Adalia in December; and he informs me that it is common in marshy districts all along the southern coast of Asia Minor, and he observed it on the Giaour Dagh up to an altitude of 2000 feet. Canon Tristram remarks (Ibis, 1865, p. 82), the Streaked Wren Warbler is "one of the characteristic birds of Palestine, and, like all the others I have named, is a permanent resident. I had met with it in Egypt, where, however, I believe, it does not remain throughout the year, and it is certainly there neither so conspicuous nor so easy of observation in its habits as in Syria. It is here spread throughout the whole country wherever there is water, preferring the neighbourhood of streams, and remaining in the low plains during winter, but ascending to the hill-sides in spring. In its actions it has much of the character of the *Salicariæ*, and even in its note also, excepting in tone, for it is without their jarring harshness. The little fellow will often run up a reed or tamarisk-twig just in front of your horse, and then, after giving forth his blithe shrill note for a few seconds, as he clings, with head erect and tail downwards, will suddenly rise into the air and hover overhead, warbling like the Cisticole, or as the Willow-Wren will sometimes, but rarely, do at home."

In North-east Africa *Drymœca gracilis* is resident and tolerably numerous. Von Heuglin says that it inhabits Arabia Petræa, Nubia, Takah, and the Bogos country, is resident and breeds in Nubia in June, July, and August, but earlier than that in Egypt; and, according to Captain Shelley (B. of Egypt, p. 98), it is "abundant both in the fields and marshes of Egypt and Nubia, where it remains throughout the year. Its song is powerful and melodious, and is frequently to be heard amongst the reeds. There are apparently two constant forms of this bird; but they hardly differ sufficiently to be separated as distinct species. I only brought home one specimen that exactly agreed with the plate in Rüppell's 'Atlas,' while all those that I have seen from Lower Egypt belong to the other form; that is to say, they are darker in colour, have the whole of the shaft-markings more strongly pronounced, are rather larger, and have darker bills. In habits the former appears to be the common species in Upper Egypt and Nubia, and frequents the fields, while the latter is most abundant in the Delta, and usually to be met with in marshes or damp localities." Mr. Blanford found it numerous amongst the low bushes on the plains near Zoulla, in Abyssinia.

In Asia it ranges as far east as India. Mr. Blanford found it common in Baluchistan and Southern Persia, ascending to the southern portion of the highlands at Shiraz; and it probably inhabits South-western Turcomania, being, I believe, the *Atraphornis platyura* of Severtzoff, which species, he says, is found also on the western shores of the Caspian (in 1859). Mr. A. O. Hume writes (Stray Feathers, i. p. 195) respecting this species as follows:—"This bird was equally abundant with *Drymoipus longicaudatus*, and in the same situations. It is a much commoner bird than is generally thought. I have it from various parts of the Doab, from the Punjab, and from several localities in Rajpootana, notably the neighbourhood of the Sambhur Lake, where Mr. Adam informs me that it is very common. Along the banks of the Jhelum, the Chenab, the Sutlej, and the Indus, wherever there was any vegetation, but especially tamarisk-bushes, you could scarcely fail to meet with fifty specimens in an hour's walk. Indeed,

in Sindh it was much commoner than *Drymoipus longicaudatus*, but not nearly so common as along the banks of the great rivers." According to Dr. Jerdon it is found along the Hoogly, the Indus, and the Ganges; Captain Beavan says that it is common at Maunbhoom; Mr. E. A. Butler records it from Mount Aboo (where, however, it is sparingly met with), Mr. W. E. Brooks from Mussouri and Gangaotri; and, according to Mr. A. O. Hume (Stray Feathers, iii. p. 136), Mr. Oates obtained it at Thayetmyo, in Upper Pegu.

In habits this bird is said to be very active and restless, frequenting the thickets and low bushes, from which it is extremely difficult to drive it out. It creeps and climbs about in the close foliage with ease, resembling in that respect our comnon Wren, and is not unfrequently seen on the ground in search of insects, and amongst dense reed-growth; and as it hops and climbs about it carries its tail high, sometimes quite erect, especially when it utters its clear low call-note. The male is said to be of a jealous and quarrelsome temperament; and during the pairing-season they may often be seen fighting and pursuing each other. In Maunbhoom, Captain Beavan says (Ibis, 1867, p. 454), this bird often "goes about in parties of seven or eight, sometimes more, frequenting the low and thick bushes of *Zizyphus jujuba*. In watching a flock of them, some are seen diligently searching every twig and leaf, others on bare twigs near the ground prying intently among the leaves, another, mayhap, on a fallen leaf, with his tail cocked up, and whole attitude one of the greatest consequence. Another, on the top of the bush, is preening himself, twisting his body, and stretching his wings; and the last, on the point of flying off to a neighbouring bush covered with scarlet flowers, gives a preparatory circular sweep with his tail, and is off, soon to be followed by all the rest.

"The male has a very sweet but short song. The peculiar silky texture of the feathers of the breast is remarkable. They are sometimes, but not often, seen in low trees. The whole flock, when they see any thing unusual, will commence their chirping-call of *tee-tee-tee*, whence the native name 'Teep-tee-pee.'" Mr. Blanford, who met with it in Persia, says (E. Pers. ii. p. 207) that he always saw it in sandy semi-desert localities or salt swamps. "Sometimes it is found in thick bushes, but more frequently in the scattered shrubs and small bushes scattered about deserts and sandy shores. It is an active little bird, constantly in motion inside the bushes, hunting for insects amongst the twigs and occasionally on the ground under the bush, and flying the shortest of distances with the feeblest of flights. Its nest, which I saw on the Abyssinian coast, is like that of other *Drymœcæ*, made of grass, oval, and with an entrance at the side near the top. The eggs are described by Von Heuglin as white spotted with brownish. Specimens killed on the 17th of March at Jálk were breeding." In his notes on the ornithology of Abyssinia this gentleman also remarks that "this bird has the usual hiding, skulking habits of the genus; and consequently it was by no means easy to procure specimens. In general it is only seen for an instant flying with a weak uncertain flight from one bush to another, which it immediately enters, and is lost amongst the roots and branches. It is always solitary or in pairs, never in flocks. Mr. Jesse found the nest, with two young birds apparently only hatched a few days before, on June 12. It was neatly constructed chiefly of grass, with the entrance at the side, and placed in a hedge which surrounded the Commissariat enclosure."

The nest of the Streaked Wren Warbler is fully domed, having the entrance at the side. Mr. Andrew Anderson, who found it breeding on the Ganges, writes (Ibis, 1872, p. 237):—"I

first became acquainted with this interesting little bird in April 1871; but although it was far from uncommon, I found it very local and confined entirely to the tamarisk-covered islands and 'churs' along the Ganges. From dissections made it was evident that these birds were then breeding: and any doubts there may have been on this score were speedily removed; for shortly afterwards I saw young fledgelings being fed by the parent birds. I need hardly say that the acquisition of the nest and eggs of this diminutive bird was looked forward to with no small degree of pleasure; but, unfortunately, it was then too hot for me to work at the subject personally, and the matter was left in the hands of my native collectors, with the usual unsatisfactory results.

"This season, having returned from my cold-weather tour somewhat earlier than usual, I devoted my mornings to exploring the islands, determined to become possessed of this desideratum; but fresh difficulties had to be overcome. Not only had the river changed its course, but the favourite haunts of the Thao Warblers had been washed away by the late unprecedented heavy rains. This added to the distance I had to travel before productive hunting-ground could be reached, which, with the delay in crossing the river, &c., left me only two hours for actual collecting, notwithstanding I frequently got up at 2 A.M.

"Under these circumstances any great success was hardly to be expected; and the acquisition of two nests has been the sole result of my exertions. But these, I pride myself, are unique, so far as Indian-taken specimens are concerned; another week and it would have been again too late. The first nest was taken on the 13th of March last, and contained three well-incubated eggs; of these I saved only one specimen, which is now in the collection of Mr. Brooks. The second was found on the following day, and contained two callow young and one perfectly fresh egg. In both cases one of the parent birds was shot off the nest; so that the eggs have been thoroughly identified.

"In its actions, habits, and nest-architecture *Burnesia lepida* resembles the true *Drymœcæ*. The nest is domed over, having an entrance at the side; and the cavity is comfortably lined or, rather, felted with the down of the madar plant. It is fixed, somewhat after the fashion of that of the Reed-Warbler, in the centre of a dense clump of surput grass, about two feet above the ground. On the whole, the structure is rather large for so small a bird, and measures six inches in height by four in breadth."

An egg sent to Mr. A. O. Hume by Mr. Anderson is described by him as being "very broad, oval in shape, a good deal compressed, however, and pointed towards the small end. The shell is very fine, and has a decided gloss. In colouring the egg is exactly like that of some of the Blackbirds, a pale-green ground, profusely speckled and streaked with a bright, only slightly brownish, red; the markings are densest round the large end, where they form a broad, nearly confluent, well-marked, but imperfect and irregular zone. It measures 0·55 by 0·41." Von Heuglin and Mr. Jerdon, and Mr. E. A. Butler all agree tolerably well in their description of the eggs of this species, except that Von Heuglin describes the ground-colour as white; but, curiously enough, Canon Tristram, who assures me that he could not possibly be mistaken in the eggs of this Warbler, as he has taken so many, describes the eggs as being "richly-coloured pink with a zone of dashed red near the larger end, in shape and colour resembling some of the *Prinia* group."

I must confess that I am quite unable to reconcile these conflicting statements, especially as I have assured myself, by a careful comparison of examples from Asia Minor, Palestine, North Africa, and India, that there is no specific difference between the birds from the different localities. Some are paler than others; but these, I observe, were in every case obtained in desert places, where all birds appear to be paler in general coloration.

The specimen figured is an adult male from Adalia in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, *c*, ♀. Adalia, December 18th, 1874 (*C. G. Danford*). *d*, ♂. Egypt, February 28th, 1870 (*G. E. Shelley*).

E Mus. Brit. Reg.

a. Gennesareth. *b*. Brook Kishon. *c*. Tiberias (*H. B. Tristram*). *d*. Nile. *e*, ♂, *f*, ♀. Zoulla, Abyssinia, January 1868 (*W. T. Blanford*). *g*, ♂. Jalk, Baluchistan, March 17th, 1872. *h*, ♀. Bahu Kelat, Baluchistan, February 3rd, 1872 (*Blanford*). *i*. N.W. Himalayas (*Capt. Pinwill*).

E Mus. H. Seebohm.

a, ♂. Adalia, December 18th, 1874 (*C. G. Danford*). *b*, ♂. Carmel, Palestine, March 24th, 1864 (*H. B. Tristram*).

Subfamily *CRATEROPODINÆ*.

Genus ARGYA.

Turdus apud Desfontaines, Mém. de l'Acad. Roy. Sc. 1787, p. 498.
Malurus apud Cretzschmar, in Rüpp. Atl. p. 19 (1826).
Sphenura apud Ehrenberg, Symb. Phys. fol. *cc* (1828).
Argya, Lesson, Traité d'Orn. p. 402 (1831).
Crateropus apud Bonaparte, Consp. Gen. Av. i. p. 278 (1850).

Undoubtedly the Bush-babblers must be ranged near the Warblers, and in the large family Turdidæ, though they form a clearly distinct subfamily, in which there is only the present genus. The Bush-babblers inhabit the extreme southern portion of the Palæarctic Region, the northern portion of the Ethiopian, and the Indian Regions, two species only being found within the limits of the regions of which I treat. In habits these birds are somewhat peculiar, differing considerably from the Thrushes and Warblers. They frequent the rough scrub in desert places, creeping about amongst the thickets with ease; and they are said to run with facility on the ground from bush to bush. Their flight resembles that of the Starling; and they are as garrulous as that bird. They build a large nest of roots and grasses, which is placed on a bush, and deposit uniform dark-blue eggs. They feed on insects, berries, and seeds.

Argya squamiceps, the type of the genus, has the bill moderate in size, curved towards the tip; nostrils oval, placed in the anterior portion of the nasal depression, which is posteriorly feathered; gape without bristles; wings broad, rather short, first quill about three quarters the length of the second, which is shorter than the eighth, the third to the seventh nearly equal, the fourth being the longest; tail long, much graduated; legs and feet strong, the tarsus covered in front with five plates and three inferior scutellæ.



1. ALGERIAN BUSH-BABBLER.
ARGYA FULVA.

2. PALESTINE BUSH-BABBLER.
ARGYA SQUAMATA.

ARGYA FULVA.

(ALGERIAN BUSH-BABBLER.)

Turdus fulvus, Desfont. Mém. de l'Acad. Roy. Sc. 1787, p. 498, pl. xi.
Malurus numidicus, Levaill. jun., Expl. Sc. de l'Alg. Atl. Ois. pl. 9. fig. 1, fide Malh. Faun. Orn. de l'Alg. p. 11 (1855).
Crateropus acaciæ, Malh. Faun. Orn. de l'Alg. p. 18 (1855, nec Rüpp.).
Crateropus fulvus (Desf.), Bp. Cat. Parzud. p. 18. sp. 23 (1856).
Crateropus numidicus (Lev.), Loche, Cat. Mamm. et Ois. obs. en Alg. p. 75 (1858).

Figuræ notabiles.

Desf. *l. c.*; Levaill. *l. c.*

♂ *ad.* corpore suprà rufescenti-isabellino vix brunneo tincto: pilei et dorsi plumis centraliter pallidè brunneo notatis: alis et caudâ sordidè brunnescenti-isabellinis, remigibus extùs pallidè isabellino marginatis: mento et gulâ albis: corpore reliquo subtùs pallidè rufescenti-isabellino, abdomine centraliter fere albo: rostro nigricanti-corneo: iride fuscâ: pedibus pallidè brunnescenti-flavis vix viridi tinctis.

♀ *ad.* mari similis.

Adult Female (Algeria). Upper parts rufous isabelline with a faint brownish tinge, the centre of the feathers on the head and back rather darker and browner; wings and tail dull isabelline with a dusty brownish tinge, the quills externally margined with pale isabelline; chin and upper throat pure white; rest of the underparts pale warm rufous isabelline, fading to creamy white on the centre of the abdomen; bill blackish horn; iris light brown; legs pale brownish yellow with a faint shade of greenish. Total length about 10 inches, culmen 0·9, wing 3·85, tail 5·5, tarsus 1·3.

Sexes alike.

The range of the present species, like that of its near ally *Argya squamiceps*, is extremely limited; for it inhabits only North-western Africa, being chiefly met with in Algeria, where Loche says that he met with it in the vicinity of Sidi-Maklouf, Laghouat, in the oases of Alica, Aït el Chebrok, and various other localities in the Sahara; and Mr. C. F. Tyrwhitt-Drake states that he met with it between Morocco and Mogador; but M. Favier does not appear to have observed it in the northern portions of Tangier. It was first discovered by Desfontaines in Tunis, the locality given by him being Cafsa.

The chief information I can glean respecting the habits and nidification of the present species is what has been published by Loche and Canon Tristram. The latter gentleman writes (Ibis, 1859, p. 420) as follows:—"This bird forms one of the features of Saharan ornithology, numerous wherever there are trees either wild or cultivated, and as noisy and garrulous as the Starling, whom it much resembles in its manner of flight. It flies very straight, with its long tail expanded, and is very wary. Often secreting themselves by threes and fours in a shrub,

these birds remain closely concealed, till at the pursuer's near approach they silently steal away close to the ground to the next bush. They are generally in companies of seven or eight. Invariably do they alight at the foot of the tree or bush, and then noiselessly creep up to the very top, descending in line on the other side, except one sentinel, who remains perched on the topmost bough to give the alarm of danger. Often as I have watched them, I never saw them omit this precaution. The note is very peculiar—*chur-chur-r-r, wheer-wheer-wheer.* The nest is a loose fabric of sticks and fine roots and straws; and I was told by the Arabs that they lay a blue egg, which Captain Loche has since had forwarded to him, and of which I have received a specimen. They are considered good eating by the French Spahi officers, and have wonderful medicinal qualities according to the Arab Hakeems. I found the flesh bitter and dry. The sexes are alike in plumage. On dissection I have found the gizzard filled indiscriminately with beetles and seeds."

Loche says that it is only met with in the southern portion of Algeria, where it frequents the oases, in which it finds its food, which consists of insects, seeds, and small berries. It is sprightly in its habits, and runs more than it flies, and retreats when pursued by running from one bush to the other. It only perches on low bushes; and its flight is short and jerky. It is usually found in flocks of seven to ten individuals, is noisy and restless; and its song is a plaintive and often repeated whistle. It nests close to the ground, on bushes; and its nest is large and somewhat carelessly built of grass-bents and a few roots, and lined with a little wool and a few feathers. Its eggs, three or four in number, are clear azure-blue, unspotted, and measure about 24 millims. by 19 millims.

The specimen figured, on the same Plate with *Argya squamiceps*, is an adult bird from Algeria in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Algeria (*Fairmaire*).

E Mus. H. B. Tristram.

a, ♀. Laghouat, November 18th, 1856. *b*, ♂. Blad el Amer, Algeria, December 24th, 1856 (*H. B. T.*).

E Mus. J. H. Gurney, jun.

a ♂, *b*, ♀. Algerian Sahara, April 26th, 1870 (*J. H. G., jun.*).

ARGYA SQUAMICEPS.

(PALESTINE BUSH-BABBLER.)

Malurus squamiceps, Cretzschm. in Rüpp. Atl. taf. 12. p. 19 (1826).
Sphenura squamiceps (Cretzsch.), Ehr. Symb. Phys. fols. *cc* et *dd* (1828).
Argya rueppelli, Less. Traité d'Orn. p. 402 (1831).
Crateropus squamiceps (Cretzsch.), Bp. Conspectus Gen. Av. p. 278 (1850).
Crateropus chalybeus, Bp. Compt. Rend. xlii. p. 765 (1856).
Crateropus chalybeius (Bp.), Tristram, Ibis, 1865, p. 79.
Crateropus chalybius (Bp.), Blyth, Ibis, 1867, p. 6.

Figura unica.

Rüpp. *l. c.*

♂ *ad.* corpore suprà pallidè umbrino-cinereo, plumis in pileo, capitis lateribus et dorso centraliter fusco notatis: alis et caudâ pallidè umbrino-cinereis, remigibus in pogonio interno saturatioribus: corpore subtùs pallidiore, mento, gulâ et abdomine centraliter fere albis, gulæ et pectoris plumis centraliter fumoso notatis: hypochondriis et subcaudalibus pallidè brunnescente cervino lavatis: rostro brunnescenti-corneo, ad basin flavicante: iride brunneâ: pedibus pallidè brunneis.

♀ mari similis.

Adult Male (Engedi, Palestine, January). Upper parts of a peculiar greyish dust-brown, most nearly resembling that of the dry but unroasted coffee-bean; feathers on the crown, sides of the head, and back with lighter edges and dark brown centres; wings and tail greyish dust-brown, the inner webs of the former rather darker; underparts paler than the upper parts, the chin, the centre of the throat, and of the abdomen nearly pure white; feathers on the throat and breast with dark centres; flanks and under tail-coverts tinged with warm buff; bill horn-brown, yellowish at the base; iris reddish brown; legs light brown. Total length about 11·5 inches, culmen 1·0, wing 4·3, tail 5·7, tarsus 2·45, outer tail-feather 2 inches shorter than the central ones.

Female (Jericho). Undistinguishable from the male in colour or markings, but, if any thing, a very trifle less in size.

Young (Jericho, 14th April). Resembles the adult, except that the feathers are short, and the plumage is rather loose and lax.

The range of this Babbler is very limited. First described by Rüppell from Akabah, in Arabia, it was subsequently obtained in Palestine, and redescribed by Bonaparte, and has also been met with in Arabia Petræa; thus it only just comes within the limits of the Palæarctic Region. It appears to be most numerous in Palestine, whence all the specimens I have examined have been obtained. Canon Tristram writes (Ibis, 1865, p. 80) as follows:—"It is strictly confined to the

larger oases round the Dead Sea, and is well known to European residents as the 'Hopping Thrush' of Jericho, and is evidently the 'Mocking-bird' of Lynch's 'Narrative.' It is abundant in the rich oases of Ain Sultan and Ain Duk at the north-west of the Dead Sea, in the sultry corner at the north-east under the hills of Moab (the ancient plain of Shittim), and at the south-east end in the luxuriant tangles of the Safieh. A few inhabit the shrubs of Engedi; and we found it once or twice at the Wady Zuweirah, at the south-west of the Dead Sea. Nowhere else did it come under our observation; and thus we find a distinct and most characteristic species limited to an area of forty miles by twelve, and not occupying more than ten square miles in the whole of that area, so far as our present knowledge extends." Von Heuglin says (Orn. N.O.-Afr. p. 389) that it inhabits the bushes and trees, in pairs and small families, in Arabia Petræa and Hedjáz, especially on the borders of the Gulf of Akabah, and he believes that he saw it at Sauakin. In the collection made by Hemprich and Ehrenberg, now at Berlin, I found two specimens, both from Arabia. It is said to occur in Nubia; but I think it probable that *A. acaciæ* may have been mistaken for the present species.

Except what has been published by Canon Tristram, there is scarcely any thing on record respecting the habits of the present species. This gentleman writes (*l. c.*) that the Bush-Babblers are "most sociable and noisy birds, always in small bands, though not in large flocks, hopping along the ground in a long line with jerking tail, and then, one after another, running up a bush, where they maintain a noisy conversation till the stranger's approach, when they drop down in single file, and run along the ground to repeat the same proceedings in the next tree. The nest is a large clumsy structure, placed always in the centre of a thorn-tree, and requiring some little labour with the hatchet to clear a way to it. It is composed entirely of strips of bark loosely woven together, and without any other lining. One in my collection looks much like a very large nest of Savi's Warbler, from this peculiarity of the employment of but a single material. The eggs are four to six in number, dark rich green, smaller than those of the common Thrush, and a little larger than the eggs of *Crateropus fulvus*. The parent birds continue their attention to the young for some time after they leave the nest; and I have been amused in watching the manner in which the old bird will remain at the top of a bush, scolding and screaming at the intruder till all her brood have dropped down one after the other, and are running to the next tree, when she suddenly runs down and follows them in silence, to repeat the same manœuvre so long as she is followed. Their food consists principally, if not entirely, of the berries of the zizyphus or jujube, which are to be found at all seasons of the year."

I possess eggs of the present species received from Canon Tristram, which agree with his description above given, but have never had an opportunity of examining a nest of this bird.

The specimen figured, on the same Plate with *Argya fulva*, is the male above described, and was obtained in Palestine by Canon Tristram.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Engedi, Palestine, January 22nd, 1864. *b*, ♀. Jericho, January 7th, 1864 (*H. B. Tristram*).

E Mus. H. B. Tristram.

a, ♂. Jericho, March 29th, 1858. *b*, *c*, ♂, *d*, ♀. Jericho, January 1864. *e*, *f*, ♀. Engedi, January 22nd, 1864. *g*, *juv*. Jericho, April 14th, 1864 (*H. B. T.*).

E Mus. Berol.

a. Arabia. *b*. Mecca (*Hempr. & Ehr.*).

E Mus. Howard Saunders.

a, ♀. Jericho, January 4th, 1864 (*H. B. Tristram*).

Family ACCENTORIDÆ.

Genus ACCENTOR.

Curruca apud Brisson, Orn. iii. p. 394 (1760).
Motacilla apud Linnæus, Syst. Nat. i. p. 329 (1766).
Sturnus apud Scopoli, Ann. I. Hist. Nat. p. 131 (1769).
Sylvia apud Latham, Ind. Orn. ii. 511 (1790).
Accentor, Bechstein, Orn. Taschenb. i. p. 191 (1802).
Prunella apud Vieillot, Nouv. Analyse, p. 43 (1816).
Spermolegus apud Kaup, Natürl. Syst. p. 152 (1829).
Tharrhaleus apud Kaup, op. cit. p. 137 (1829).
Laiscopus apud Gloger, Naturg. p. 267 (1842).

Naturalists differ not a little in opinion as to the proper place for this genus, some having placed it amongst the Thrushes, and others amongst the Warblers. Sundevall goes so far as to place it very far distant from the Thrushes and Warblers, amongst the Conirostres, making a separate "phalanx," which he calls Decempennatæ, for the Accentors alone. This course appears to me to be inexpedient; and I have deemed it more advisable to make a separate family for these birds, placing them between the Crateropodinæ and the Panuridæ.

This genus is but a small one; it is confined to the Palæarctic and northern portions of the Oriental Regions, and has, though rarely, been met with in North Africa. In the Western Palæarctic Region three species only have occurred, two of which are resident, and the third is only a straggler from the Eastern Palæarctic Region.

In habits the Accentors vary somewhat *inter se*; and the Hedge-Accentor differs not a little from its congener the Alpine Accentor, in general habits, mode of nidification, and choice of habitat; for whereas the latter affects lonely, rugged, mountainous places, and places its nest in a cleft of a rock or on the ground under a stone, the Hedge-Accentor affects gardens and cultivated places, and builds in a bush or hedge. All the Accentors deposit uniformly-coloured greenish-blue eggs, and build somewhat bulky nests of grass bents and fine roots &c. lined with wool or hair. They are good songsters, and may be heard singing even during the winter in fine clear weather. They feed on seeds as well as insects, and have the stomach very muscular. They are resident, only changing their quarters in winter when driven away from their summer haunts by the severity of the season and consequent scarcity of food.

Accentor collaris, the type of the genus, has the bill moderately long, straight, rather conical, broad at the base, compressed towards the tip, nostrils rather elongated in shape, placed in the anterior portion of the nasal depression; gape without any perceptible bristles; wings moderate, rather rounded, the first quill very small, the third and fourth the longest; tail tolerably long, nearly square; tarsus moderately strong, covered in front with four plates and three inferior scutellæ, tarsus feathered at the upper end; feet tolerably strong, the outer and middle toe joined at the base, claws strong, curved, that on the hind toe much the strongest.



ALPINE ACCENTOR

ACCENTOR COLLARIS.

151

ACCENTOR COLLARIS.

(ALPINE ACCENTOR.)

Sturnus collaris, Scop. Ann. i. Hist. Nat. p. 131 (1769).
Fauvette des Alpes, Montb. Pl. Enl. vi. pl. 668. fig. 2 (1783).
Alpine Warbler, Lath. Gen. Syn. ii. pt. 2, p. 434 (1783).
Motacilla alpina, Gm. S. N. i. p. 957 (1788, ex Lath.).
Sturnus moritanus, Gm. S. N. i. p. 804 (1788).
Accentor alpinus, Bechst. Orn. Taschenb. i. p. 191 (1802).
Accentor major, Brehm, Naum. 1855, p. 285.
Accentor subalpinus, Brehm, Naum. 1855, p. 285.
Accentor collaris, Newton, ed. Yarr. Brit. B. i. p. 296 (1872).

Fauvette des Alpes, *Accenteur alpin*, French; *Alpen-Flühvogel*, German.

Figuræ notabiles.

Montb. Pl. Enl. vi. pl. 668. fig. 2; Naum. Vög. Deutschl. iii. taf. 92. fig. 1; Gould, B. Eur. ii. pl. 99; id. B. Gt. Br. pt. xiii. (1868); Bettoni, Ucc. Lomb. pl. —.

Ad. suprà cinerascens, pilei dorsique plumis medialiter saturatè brunneis, his etiam pallidè stramineo marginatis: dorso imo et uropygio ochraceo-cinerascentibus, supracaudalibus vix rufescentibus fulvo marginatis et medialiter brunneo striatis: scapularibus pallidè rufescentibus, medialiter saturatè brunneis: tectricibus alarum cinerascentibus, reliquis nigris albo apicaliter punctatis, majoribus ad basin cineraceo lavatis: remigibus saturatè brunneis, extùs ochrascenti-rufo lavatis et albido apicatis: rectricibus brunneis, extùs cineraceo marginatis, versùs apicem rufescentibus, pogonio interno apicaliter albo maculato: gutture albido, nigro fasciatim transnotato: pectore et abdomine medio clarè cinerascentibus, hujus plumis brunneo transfasciatis et albido marginatis: corpore laterali pallidè castaneo, plumis hypochondriacis albo marginatis, his imis medialiter brunneis: subcaudalibus nigricanti-brunneis, latè albo marginatis: subalaribus fulvescenti-brunneis, vix rufescentibus, carpalibus nigris albo marginatis quasi transfasciatis: rostro nigricante, ad basin flavicante: pedibus pallidè brunneis: iride brunneâ.

♀ mari similis.

Pull. similis adulto sed suprà magis olivascens: dorso medio nigro et stramineo vario: tectricibus alarum brunneis rufescenti-ochraceo lavatis et fulvo apicaliter punctatis: subtus ochraceus, brunneo striatus, gulâ albicante.

Adult Male (Savoy Alps). Upper parts dull ashy grey, the head and neck indistinctly striped with dark grey; feathers of the back with dark brownish central stripes; scapulars washed with bright rufous; quills dark brown, slightly edged with ashy brown on the outer web, and tipped with dirty white; secondaries more broadly edged with ashy grey and rufous, the innermost having the inner web broadly

margined with dull rufous; wing-coverts blackish brown, the larger ones being broadly margined with brownish grey at the base, and all having pure white apical spots; tail blackish brown, narrowly margined with dull rufous brown, the central feathers with rufous brown, and the outer feathers with white patches at the tip of the inner web; throat white, each feather having a black tip, thus giving almost the appearance of scales; breast and abdomen dull ashy grey, the feathers on the latter having a narrow oblique line of blackish brown across the tip, the terminal portion being dull ashy white; flanks rich light chestnut-red, most of the feathers being margined with white; under tail-coverts blackish brown, broadly tipped with white; under wing-coverts blackish brown tipped with white; beak blackish brown, yellowish at the base; legs and feet cinnamon-brown; claws black; iris brown. Total length 7·5 inches, culmen 0·55, wing 4·1, tail 2·9, tarsus 1·0.

Female. Undistinguishable in plumage from the male.

Young Female (Sierra Nevada, August 1870). Very similar to the adult, but having rufous edgings to the feathers on the back, the grey underparts being duller, and washed with buff, and the white on the throat of the adult bird being entirely absent.

Nestling. Upper parts very similar in character to the adult, but with the quills, especially the secondaries, broadly margined and tipped with rufous; the short stumpy tail dark brown, broadly tipped with dull rufous; entire underparts buffy white, on the flanks washed with yellowish buff, and everwhere striped with dark brown, each feather having a broad central line of that colour.

As its name implies, the present species is an inhabitant of the high mountains; but its range does not extend far to the north; and if we say that it is found in the mountains of Central and Southern Europe, we give as nearly as possible its geographical range.

In Great Britain it is known but as a very rare straggler, having only occurred a few times in the southern part of England; and we cannot do better than quote our friend Professor Newton, who, with reference to the various instances of its occurrence which are on record, writes, in his edition of Yarrell, as follows:—"By the kindness of the late Dr. Thackeray I am enabled to give a figure of the Alpine Accentor from the female specimen killed in what was then the garden of King's College, Cambridge, on November 22nd, 1822, and recorded in the 'Zoological Journal' for 1824 (i. p. 134). At that time two of these birds had been occasionally seen climbing about the buildings, or feeding on the grass-plots, and were so tame that one of them was supposed to have fallen a victim to a cat: the other was shot as stated; and the specimen is preserved at Eton. The species, however, had been previously observed in England, though the fact was not recorded until April 1832 (Mag. Nat. Hist. v. p. 288); for so long ago as August 1817, Mr. J. H. Gurney, jun., informed the Editor, an example, still in the possession of Mr. Pamplin, was shot by him in the garden of Forest House, near Walthamstow, in Essex. About March 1824 Mr. Richard Lubbock attentively observed a third at Oulton, near Lowestoft, in Suffolk, as he mentions in his 'Fauna of Norfolk.' I am indebted to the late Dean Goodenough for the knowledge of the occurrence of another example, which was shot in his garden at Wells, in Somersetshire, in 1833. On January 9th, 1844, a bird was shot by Mr. Jordan on the rocks near Teignmouth, which, though originally taken for a Richard's Pipit, is stated by Mr. W. S. Hore (Zool. p. 566) to have been an Alpine Accentor; and the same gentleman subsequently recorded (Zool. p. 879) a specimen obtained soon after near Torbay, which the Editor believes

to have been killed at Berry Head, and shown to him by its owner, Mr. F. M. Lyte, in December 1850. Mr. Porter states (Zool. p. 5958) that on December 26th, 1857, two were shot on the Downs near Lewes, and on January 10th, 1859, Mr. Gatcombe obtained a pair of this species, which he had seen about three weeks before, on the rocks of Plymouth Citadel. In addition to the record he made at the time (Zool. p. 6377), he has been so good as to inform the Editor that their 'actions, when hopping about on the cliffs, resembled those of the Hedge-Sparrow, and the reddish mark on their sides appeared as nearly as conspicuous as that of the Redwing. They were very tame, but when frightened took refuge in a sort of cave, uttering notes which resembled the words *tree*, *tree*, *tree*,—similar to those made by many small birds when fighting.' Another specimen was, according to Colonel Newman, writing in February 1860 (Zool. p. 6889), shot some time previously near Cheltenham; and Mr. W. W. Boulton mentions (Zool. p. 8766) his having seen one, in 1863, which had been shot near Scarborough; while the Editor has been informed by Mr. Howard Saunders (who is perfectly well acquainted with the Alpine Accentor) that on August 20th, 1870, he watched one for about a quarter of an hour on one of the highest Welsh mountains, most admirably refraining from shooting it, or even mentioning the fact to his guide."

In Scandinavia the Alpine Accentor does not occur; but it has been recorded from Heligoland; and in Northern Germany it is occasionally met with, when, during the cold season, it is driven down by the severe cold from its home in the high mountain-ranges. Our friend Mr. Taczanowski informs us that it is found in the Tatra Mountains of Galicia; and Count Wodzicki, in his excursion in the Tatra and Carpathians of Galicia in 1851, says:—"I found the Alpine Accentor less shy in the Tatra Mountains than in the other mountains of Europe, as the appearance of man in these solitary parts does not cause them to show any signs of fear; and they did not seem to be aware of danger until I had fired several times, when they took refuge in the rocks, from which I could not dislodge them. If, however, a person hides himself, they soon return. I never met with them below the altitude of 4000 feet; in many mountains in the Tatra range they are found in small colonies of twenty to forty pairs, nesting on the Polish Tomanova and Czerwony-wierzch; but in the Alps I have never found them so gregarious during the nesting-season. Clothed as they are with an abundance of soft plumage, they withstand the most severe cold; and only when the snow covers the seeds do they descend the slope of the mountains on the Hungarian side, and not on our side. Like the Larks, they feed in the autumn on seeds of various Alpine plants, and in summer on coleoptera and other insects. They are greedy, and get as fat as Buntings." It occasionally straggles during the winter season into Belgium and the north of France. Baron de Selys refers to one having been taken in a garden near Antwerp during the severe winter of 1835, when a pair were seen, but only one bird secured; and Degland and Gerbe state that it has been killed at St. Omer and near Bergues. In the south of France it is met with in the valleys of Provence during severe winters, but is by no means a common species there. In Portugal, according to Professor Barboza du Bocage, it is rare; but in Spain it appears to be more numerous. Mr. Howard Saunders writes that he "observed the Alpine Accentor in the Sierra Nevada; and a friend who this year ascended the Pichaco de la Veleta found it extremely abundant there. Mr. J. H. Gurney, jun., informs me that he saw one clinging to the masonry outside the signal-station at Gibraltar in December."

Major Irby also informs us that he has seen it three or four times in the month of January on the rock of Gibraltar. Mr. A. Basil Brooke writes to us stating that he found it "common in the Pyrenees, where he saw them in small flocks, in the months of April and May, at an elevation of about 5000 feet." It is, however, in all probability, most numerous in the Alps, where Bailly writes that "it is found during the breeding-season in the Alps of Maurienne, Mont Cenis, and Chamounix, and is met with as high as the regions of eternal snow. It also inhabits, though sparingly, the rocky localities of the Tarentaise Alps (especially near the glaciers of Allues), the mountains of Bauges, amongst others those of Margeriaz, Rozannas, and Tréloz, and has been observed at Grand-Son, Arpétaz, Mount Grenier, and other places." In Italy it is not common, but descends there from the mountains in the cold season; and in Sardinia, according to Salvadori, it is only accidental; this gentleman further states that there are two Sardinian-killed specimens in the Museum there. Mr. A. Basil Brooke also writes that "this bird is of very rare occurrence in Sardinia; but my brother, Sir Victor Brooke, who was there with me in November 1869, observed a small flock hopping about the rocks at the back of Villacidro." As regards its occurrence in Greece, Lindermayer considers that it is resident in that country, as he observed it both in winter and in summer, and found the nest with eggs and young. During the breeding-season it inhabits the mountains in the north of Greece, and perhaps also the heights of the Peloponnesus, but does not occur on the islands. In the winter season it descends to the plains, and there inhabits the dense thickets. It is found in the mountains of Southern Germany; and Seidensacher found it in Styria, on the Bachergebirge, in May 1862, and states that many descend from the heights in winter, and that numbers have been caught at Tüffer. In Austria it is usually called, as we are informed by Victor Ritter von Tschusi Schmidhofen, *Steinlerche* or Stonelark. It is common in all the Alpine regions of that country; and our friend above referred to found it, in June 1869, breeding in the Riesengebirge, and shot a female on the Brunnberg. In the Hungarian and Siebenbürgen Carpathians it is common. In the winter season they descend to the plains, and are often seen far from the mountains. They breed twice a year, about the middle of May and in the middle of July. In Southern Russia Professor von Nordmann met with it in the mountains of Ghouriel and Abasia, where it was so little shy that it could be caught with a noose attached to a stick; he did not, however, meet with it in the Crimea, and thinks that its absence there is owing to the non-existence of high mountains. As regards its supposed occurrence in Siberia and the Amoor country, Von Middendorff certainly writes that it is not uncommon in the steep cliffs on the southern side of the Sea of Ochotsk, where he observed fledged young on the 16th of July; but he remarks that his specimens, compared with others obtained in Switzerland, agree exactly, except that they are rather smaller in size, and have the rump *rusty brown*, instead of yellowish grey. Von Schrenck also especially refers to the rich rusty red on the rump and upper tail-coverts; and, judging from these remarks, we certainly agree with our friend Mr. R. Swinhoe that the species referred to by these travellers is not *Accentor alpinus* but *Accentor erythropygius*, Swinh., of which we have now before us two examples, sent from Darasun in Dauria by Dr. Dybowski. Thus the most eastern locality where it has undoubtedly been met with is Demavend, where De Filippi observed it. We may, however, add that Colonel Drummond-Hay states that it breeds in Crete, where he met with it on the Sfakian range.

In its habits it somewhat resembles the Chats or the Rock-Thrushes; and, like the latter, it inhabits the rocky Alpine regions. Naumann says that it is not a lively bird, but that it often remains on one spot, sitting on a stone or edge of a precipice, with puffed-up feathers. It seldom or scarcely ever sits on a bough. Out of the breeding-season one often sees them in families; it is a harmless, confiding bird, flying off but a short distance when disturbed, or else hiding amongst the stones, or running away like a Stonechat, with which it bears considerable affinity. When sitting it often jerks its tail, flutters its wings, and makes quick movements with its head and the fore part of its body. Its flight is quick, being a succession of bow-shaped bounds; but it does not fly far. Its call-note, which it generally utters sitting, and but seldom on the wing, resembles that of the Snow-Finch, and may be reproduced by the syllables *tri*, *tri*, *tri*. The song of the male is pleasant and varied, but rather melancholy. It resembles the song of the Lark and Pipit, and the more so as it sings not only when sitting on the rocks but when fluttering in the air. Naumann says that the song resembles more that of the Meadow-Pipit, but is somewhat like that of the Tree-Pipit.

During the breeding-season it is to be met with in the higher Alpine regions of Southern and Central Europe; its nest is placed under a ledge of rock or in some sheltered position. We are indebted to our friend Dr. A. Girtanner, of St. Gallen, for a beautiful nest of this bird, taken in Canton Uri, Switzerland, in July 1872. This nest is neatly constructed of dried grass bents and fine roots, intermixed with a few lichens, and is lined with the same materials of rather finer texture than those forming the outside of the nest; in size it measures five inches outside and three inches inside diameter. In Dresser's collection are two sittings of the eggs of this bird, one five and the other four in number; these eggs resemble those of the Common Hedge-Accentor (*Accentor modularis*), but are larger in size. Our friend Dr. E. Rey informs us that he possesses five eggs, obtained on St. Gothard in June 1869, which in size vary from 23·0 to 23·5 millimetres in length and from 16·25 to 16·75 millimetres in diameter.

The adult bird figured and described was obtained in the Savoy Alps, the nestling from near Barcelonette, both being now in Dresser's collection; and the young bird described is in the collection of Mr. Howard Saunders.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Savoy Alps (*Count Ercole Turati*). *b*, ♀. Piedmont, December 1859 (*Count Salvadori*). *c*. Switzerland. *d*, *pullus*. Environs de Barcelonette (*E. Fairmaire*). *e*, ♂. Sierra Nevada, Spain, May 1872 (*Sanchez*).

E Mus. Howard Saunders.

a, ♀. St. Gothard, June. *b*. ♂. Savoy Alps (*Fairmaire*). *c*, ♂. Picacho de Mulhacen, Sierra Nevada, Spain, July 1870. *d*, ♀ *juv*. Picacho de Mulhacen, August 15th, 1870 (*Sanchez*). *e*, ♂. Sierra Nevada, May 1872 (*Sanchez*).

E Mus. Sir V. Brooke.

a. North Italy, 1869 (*V. B.*).



MOUNTAIN ACCENTOR.
ACCENTOR MONTANELLUS.

ACCENTOR MONTANELLUS.

(MOUNTAIN-ACCENTOR).

Motacilla montanella, Pall. Reisen Prov. Russ. Reichs, iii. p. 695 (1776).
Sylvia montanella (Pall.), Lath. Ind. Orn. ii. p. 526 (1790).
Accentor montanellus (Pall.), Temm. Man. d'Orn. i. p. 251 (1820).
Spermolegus, Kaup (*Accentor montanellus*, Pall.), Natürl. Syst. p. 152 (1829).
? *Accentor temmincki*, Brandt, Bull. Ac. Sc. de St. Petersb. 1844, ii. p. 139, fide Midd. Sib. Reise, ii. p. 172.
Prunella montanella (Pall.), Bp. Cat. Parzud. p. 7 (1856).
? *Accentor fulvescens*, Severtzoff, Turk. Jevotnie, pp. 66 & 132 (1873).

Berg-Braunelle, German.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 77; Fritsch, Vög. Eur. taf. 18. fig. 16; Naumann, Vög. Deutschl. taf. 92. fig. 2; Gould, B. of Eur. pl. 101; id. B. of Asia, part xxiii.

♂ *ad.* pileo centraliter cinerascenti-brunneo, pilei lateribus, loris et capitis lateribus cum regione paroticâ nigris, striâ superciliari circum regionem paroticam ductâ, gulâ, gutture et pectore ochraceis: dorsi plumis castaneis cinereo-fusco marginatis: remigibus fuscis extùs pallidiore marginatis, secundariis intimis et tectricibus alarum vix castaneo notatis: uropygio et supracaudalibus cinereo-fuscis: caudâ fuscâ, rectricibus vix pallidiore marginatis: corpore subtùs imo pallidè ochraceo-cervino, hypochondriis vix brunneo striatis, subcaudalibus centraliter fusco fumosis: rostro nigricante, pedibus brunneis: iride fuscâ vix flavido tinctâ.

♀ *ad.* mari similis sed coloribus sordidioribus, corpore subtùs albido vix ochraceo tincto.

Adult Male (Kultuk, 14th April). Centre of the crown greyish brown, sides of the crown, lores, and sides of the head, including the auriculars, black; a broad yellowish buff band from the base of the bill over the eye and passing round the auriculars to the neck, joining the same colour on the throat and enclosing the auriculars and patch on the side of the head; back chestnut-red, all the feathers broadly margined with greyish brown; quills dark brown, with light-brown margins to the feathers, the inner secondaries and wing-coverts slightly marked with dull chestnut; rump and upper tail-coverts greyish brown or ashy brown; tail dark brown, the feathers with slightly lighter margins; throat and breast warm ochreous buff, gradually fading on the abdomen to pale buff; flanks slightly striped with brown; under tail-coverts with the centres of the feathers dull sooty brown; bill blackish; legs light brown; iris brown, with a yellowish tinge. Total length about 6 inches, culmen 0·5, wing 2·85, tail 2·6, tarsus 0·75.

Adult Female (Kultuk, 20th April). Resembles the male, but is much duller in colour, the dark portions of the head brownish black, not black, and the underparts are buffy white instead of rich ochreous buff.

Male in winter (Pekin, December). Differs from the male in spring in having the black on the crown duller, sullied and edged with brown, and the abdomen is whiter.

Young just fledged (Chamardaban, *fide* Taczanowski, J. f. O. 1872, p. 435). Resembles the adult, but is much paler in general coloration, and the breast and throat have brown pencillings or markings.

An inhabitant of Asia, and more especially the eastern portion of that continent, the present species is but a rare straggler to Europe, and, so far as I can ascertain, does not appear to have been met with west of Russia, where, however, it probably remains to breed; for Mr. Sabanäeff, who records it from the Ural, though he only seems to have found it in the Pavdinsky Dacha, says that it certainly breeds there. It has once occurred near Jaroslaf, and probably breeds in that province. Early in July nine eggs were found there, which, Mr. Sabanäeff says, were in all probability those of the present species; but he omits to give any description of them. Temminck (*l. c.*) states that it "is not common in the Neapolitan states, Dalmatia, and in Southern Hungary;" but Salvadori does not believe that it has ever been met with in Italy. It has, however, occurred within the Austrian dominions; for Herr A. von Pelzeln states that there is an Austrian-killed specimen in the Museum at Vienna. Professor von Nordmann (Démidoff, Voy. Russ. Merid. iii. p. 171) says that it appears in the Crimea during the autumn passage, and is also seen in the gardens of Odessa, but he does not believe that it is resident or breeds there. The true home of the Mountain-Accentor is Central and Eastern Asia. Pallas, who first discovered it, states that it was common in the Transbaikal territory in the month of February, but on the Jenesei it was rarer. Dr. Severtzoff met with it in Turkestan, and divides the birds he obtained there into two forms, calling one *Accentor montanellus*, which he says occurs in the north-eastern district during the breeding-season, at an altitude of from 6000 to 10,000 feet; and the second form he calls *Accentor fulvescens*, and says that it is found in the north-eastern and south-eastern districts during the breeding-season, and the same districts as well as in the north-western portion of the country in the winter. In the MS. notes furnished to me he states, however, that in all probability there is no specific difference between these two forms, the latter being *Accentor temmincki* of Brandt. Von Middendorff met with the present species in Siberia, but obtained only a single specimen in the Stanowoi mountains; but Dr. Radde collected sixteen examples, all obtained in Mongolia during migration. He states that in the western mountain-covered portion of the country he visited he did not meet with it either in the Eastern Sajan or at Lake Baikal; but during migration it was by no means uncommon at the Tarei-nor, where the first stragglers appeared on the 16th March 1856 (O. S.), but the main body did not arrive before the 17th April. In the autumn he did not observe it; but the year after, when the migration season was over in the Bureja mountains, and the Amoor was becoming covered with ice, he shot two specimens in the willows on the banks of that river. Dr. Dybowski has of latter years obtained many specimens in Dauria (Darasun), where the present species appears to be common. This gentleman states (J. f. O. 1872, p. 434) that it is "tolerably common in the spring, arriving in the latter half of March and remaining until the latter part of April. Only a few remain to breed; and these are scattered in the more elevated portions of the mountains. We met with the old birds, in company with their fledged young, in the forests of cedar and pine at the foot of the Chamardaban mountains. In the autumn they again appear in tolerable

numbers about the middle of September, and occasionally remain as late as the early part of October." It has been met with in China, and has occurred near Pekin during severe cold; but I do not find any record of its occurrence in Japan.

As yet nothing appears to be recorded respecting the habits of the present species, which is even yet a somewhat rare bird in collections; nor is any thing definitely known respecting its nidification. Dr. Bree certainly figures what is supposed to be its egg, and states that it was sent to him by Professor Moquin-Tandon, who wrote that two eggs in his collection were taken in the south of Hungary, and sent to him by M. Raoul de Baracé D'Angers; but when at Pesth some years ago I made careful inquiry respecting the occurrence of the present species in Hungary of Herr Johann von Frivaldsky, the curator of the Museum, a first-rate oologist, who assured me that there was not even any authentic instance of a specimen having been obtained in Hungary, and he was quite sure that it had never been known to breed there. Under these circumstances, and as Professor Moquin-Tandon gives no further particulars respecting the identification of the eggs in question, I think that, to say the least, they must be looked on with great suspicion. Mr. Taczanowski states (J. f. O. 1872, p. 434) that an egg sent to him from Jakutsk as that of the present species, but for the authenticity of which he will not vouch, resembles the egg of the Blue-throated Warbler, but is a trifle larger, and less marked with pale reddish spots, and he thinks it possible that it may be nothing but a Blue-throated Warbler's egg.

Brandt expressed doubt as to the identity between the Siberian and European birds, and proposed to separate the latter, the *Accentor montanellus* of Temminck, from the bird described by Pallas under the same name, and proposed to call the former *Accentor temmincki*; but after carefully examining the plate in Werner's 'Atlas,' as well as the one in Gould's 'Birds of Europe,' I cannot discover that there is any specific difference between the birds there figured and examples in my collection from Dauria, and have therefore put both *Accentor temmincki*, Brandt, and *Accentor fulvescens*, Severtzoff, as synonyms of the present species, but with a query; for Dr. Severtzoff informs me that he is still doubtful, and I have not been able to examine and compare a series of specimens so as to speak with certainty on the question.

The specimens figured are an adult male and female, from Kultuk, in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, ♀. Kultuk, Lake Baikal, April 14th and 20th, 1870 (*Dr. Dybowski*).

E Mus. R. Swinhoe.

a, ♂ *ad.* Kultuk, April 12th, 1870 (*Dybowski*). *b*, ♀. Kulussutajeffsk, May 4th, 1856 (*Dr. G. Radde*). *c*, ♂. Pekin, December 12th (*Père David*).



HEDGE SPARROW.

ACCENTOR MODULARIS

167

ACCENTOR MODULARIS.

(HEDGE-SPARROW.)

Curruca sepiaria, Briss. Orn. iii. p. 394 (1760).
Motacilla modularis, Linn. Syst. Nat. i. p. 329 (1766).
Le Traîne-buisson ou Mouchet, Buff. Hist. des Ois. vi. p. 58 (1783).
Sylvia modularis, Lath. Ind. Orn. ii. p. 511 (1790).
Motacilla modularis, Bechst. Gemeinn. Naturg. Deutschl. iv. p. 570 (1795).
Sylvia modularis, Bechst. Orn. Taschenb. i. p. 183 (1802).
Prunella modularis, Vieill. Nouv. Analyse, p. 43. no. 141 (1816).
Accentor modularis, Koch, Baier. Zool. i. p. 196 (1816).
Tharraleus modularis, Kaup, Nat. Syst. pp. 137, 192 (1829).
Accentor pinetorum, C. L. Brehm, Vög. Deutschl. p. 457 (1831).

Hedge-Sparrow, *Dunnock*, *Nettlecreeper*, *Hedge-Chanter*, *Shufflewing* (*Wrens-man*, south of Ireland; *Reefogue*, in Wexford), English; *Mouchet*, *Traîne-buisson*, French; *Heckenbraunelle*, German; *Boeren-nachtegall*, Dutch; *Brunellen*, Danish; *Jernsparf*, Swedish; *Blaairisk*, *Jernspuv*, Norwegian; *Rautiainen*, Finnish; *Zavirooshka luisnaya*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 615. fig. 1; Werner, Atlas, *Insectivores*, pl. 76; Kjærb. Orn. Dan. taf. xxiv.; Fritsch, Vög. Eur. pl. xxv. fig. 15; Sundevall, Sv. Fogl. pl. xv. fig. 1; Gould, B. of Eur. pl. 100; Naumann, Vög. Eur. taf. 92. figs. 3, 4; Schleg. Vög. Nederl. pl. 122; Bettoni, Ucc. Lomb. tav. 52.

Ad. capite et nuchâ cinereo-fuscis brunneo notatis, hâc cinereo lavatâ: dorsi plumis saturatè brunneis rufescente marginatis: uropygio saturatè brunnescenti-olivaceo: remigibus saturatè fuscis vix pallidè brunneo terminatis, primariis in pogonio externo saturatè cervino, et secundariis ferrugineo marginatis: tectricibus alarum scapularibusque dorso concoloribus, tectricibus majoribus maculis minutis albicanti-cervinis apicatis: rectricibus saturatè fuscis brunnescenti-olivaceo marginatis: gulâ sordidè albidâ: facie laterali sordidè cinereâ: regione paroticâ brunnescente adumbratâ: jugulo, pectore superiore et subalaribus cærulescenti-cinereis: abdomine albido: hypochondriis pallidè brunneo lavatis, plumis omnibus medialiter saturatè fusco notatis: subcaudalibus albis fusco maculatis: rostro brunneo ad basin saturatè carneo: iride brunneâ: pedibus flavicanti-brunneis.

Adult Male (Olympus). Head and nape brownish grey, each feather with a dark brown centre; nape greyer than the crown; feathers of the back, scapulars, and upper wing-coverts dark brown in the centre, and broadly edged with reddish brown; rump dark dull olive-brown; quills dark brown, slightly tipped with dull light brown, and on the outer web edged with dull buff on the primaries and rufous brown on the secondaries; larger wing-coverts tipped with yellowish brown, forming an irregular band; tail dull brown, most of the feathers edged with olive-brown; throat greyish white; sides of the head and

chest ashy grey, auriculars washed with brown, and having light shafts; abdomen greyish white; flanks and tibiæ pale brown, the feathers having a broad central dark brown streak; under tail-coverts dull brown, broadly edged and tipped with dirty white; under wing-coverts pale grey, washed with buff; bill brownish black, dark flesh-coloured at the base and along a considerable portion of the lower mandible; iris dark brown; feet dull yellowish brown. Total length 6 inches, culmen 0·5, wing 2·7, tail 2·2, tarsus 0·75.

Female. Very similar to the male.

The Hedge-Sparrow, or Hedge-Accentor as some naturalists prefer calling it, is distributed throughout Europe, ranging eastward into Persia, but not occurring further to the east, being replaced in Japan by a closely allied race, *Accentor rubidus*. In Great Britain it is one of the commonest and best-known species, being equally common in all parts of the United Kingdom. In Scotland, Mr. Robert Gray writes, "the familiar Hedge-Sparrow is everywhere known, from Sutherlandshire to the Mull of Galloway, and on all the Hebrides, except the bleakest islands. On Ailsa Craig even—an isolated refuge, without hedge-rows or any attractive brushwood which make the home of the species unseen in the not far distant valleys of Ayrshire—it hops briskly among the broken boulders, and trills its wren-like song among the ungainly Guillemots with as much heartiness as if it never knew a more verdant spot. In the dull gloom of one of the numerous caves intersecting that remarkable rock, I have seen the nest of this bird placed in the ledge of rock, at the foot of a handful of the hart's-tongue fern, the floor of the cave being covered with water, and forming a strange contrast to the site usually selected by the confiding Shuffle-wing near the abodes of men.

"From its habit of breeding early in the season, this bird is often robbed of its eggs by wandering schoolboys, who treasure them for their pleasing colour; and in almost all rural districts these young persecutors indulge in the regular habit of prowling along the yet leafless hedgerows, scrubby bushes, or cast-up heaps of winter prunings, where their plunder is only too easy of discovery.

"In our northern climate it is sometimes hard to withhold one's sympathy for this modest little bird as it sits shivering on the withered sticks among which the nest is placed; frequently, indeed, a sudden change in the weather upsets the teachings of its own instincts by covering its haunts with a carpet of snow, on which it hops in sad wonderment at winter's return, although ready with a cheering note for its sitting mate the moment the breaking clouds show their silver lining and the peep of blue sky beyond."

From every part of England it is recorded as resident and very common; and in Ireland also, Mr. Thompson writes, it is distributed over the island in suitable localities.

It is found in Scandinavia, more numerous in the northern than the southern portions of that country; and Mr. Robert Collett informs me that "it is a rather common bird in the conifer-woods, and above the Polar circle is tolerably abundant up to Tromsö and the valley of the Maalseto; in Finmark proper it breeds, though sparingly, in South Varanger. On the sides of the fells I have found it as far as the pine (*Abies*) growth extends. Its chief habitat being in the young conifer-woods, the nest is almost invariably placed in small thick pine bushes, and is generally constructed of various species of moss. It is one of our earliest birds of passage,

arriving in the southern parts of the country in the first days of April, sometimes even as early as the end of March. In a few isolated instances it has been found wintering in Norway."

Its distribution in Sweden is peculiar; for Mr. Meves writes to me that "it is a most curious fact that in Southern Sweden it is only observed during migration, and, according to Nilsson, occasionally in the winter, whereas in Germany, even in the flat country in Brunswick, it is common, and numbers breed in the gardens. The most southern locality from which I have Swedish-taken eggs is Skara; near Stockholm it is only observed during migration, and is a rare bird, being only occasionally captured by the bird-catchers; but it has been found breeding near Gefle by Dr. Hartman; and I observed it commonly in Jemtland and Herjeådalen, and saw young birds, just able to fly, on the 24th of July. We obtained specimens from Quickjock; and Löwenhjelm states that it is found, but is not numerous, in Luleå-Lapland, where he observed it in the month of August."

In Finland it is occasionally observed in Nyland during migration; and Von Wright saw a pair near Haminanlaks in July 1837, which certainly had a nest in the neighbourhood, but it could not be found. I never saw it during my stay in Finland. It occurs in Northern Russia; and Mr. Meves informs me that he "met with it here and there near the Onega and Ladoga lakes, and at Kargopol;" and when in Eastern Russia he "observed it commonly from the 23rd to the 26th of June, on the steep banks covered with conifer growth (probably old river-banks) near the town of Perm. The males were in full song, and were generally met with sitting on the top of a fir bush, but at the least approach of danger dropped into the underbrush, and slipped quietly away, and recommenced singing some distance off. In the Ural I only observed it on a few occasions; but, according to Sabanäeff, it is tolerably common there also."

Borggreve writes that it is a common resident and partial migrant in all the mountains of Northern Germany, as also in the flat country in the North-western portion. He further states that it rarely breeds in the north-eastern portion of the country; but, on the other hand, Mr. A. von Homeyer states that he has found it breeding quite commonly in the Barnekow-Quitziner forest at Grimmen, near Stralsund. Though formerly, as I am informed by Mr. J. C. H. Fischer, a tolerably common bird in Denmark, it has lately become very scarce; and whereas about ten years ago it used to breed near Copenhagen, at Holte, it is now but rarely seen. In Holland and Belgium it is common, and resident; and Messrs. Degland and Gerbe likewise record it as numerous throughout France, where its provincial name is "*Traîne-buisson.*" In Provence it is, Messrs. Jaubert and Barthélemy-Lapommeraye write, common in the autumn and winter, but retires to the Alps during the breeding-season. In Portugal it is a rare bird. Professor Barboza du Bocage includes it in his list of the birds of that country, without, however, giving it a Portuguese name; and Dr. E. Rey informs me that during his sojourn in Portugal he only once saw it. It is, however, not uncommon in Spain; Lord Lilford, writing respecting his collecting-trip to the Sierras from San Ildefonso in the month of June, says:—"I was surprised to find the Common Hedge-Sparrow (*Accentor modularis*) in great abundance high up on the mountains, haunting and breeding amongst the scrub which crops up amongst the detritus and scattered boulders below the crags, in just the sort of locality I should have expected to find *A. alpinus*, which species, however, I did not here meet with." From Southern Spain Mr. Howard Saunders records it as being tolerably common in winter; but he believes that it goes north to breed.

Passing eastward, again, we find it, according to Bailly, "abundant and resident in Savoy throughout the year, frequenting the mountainous portions of the country from spring to autumn;" and the various authors on the ornithology of Italy likewise speak of it as common in the lowlands during the autumn and winter, but residing in the mountains during the breeding-season. Doderlein writes that it is "much more abundant in Sicily in the winter than at any other season of the year;" and Mr. C. A. Wright records it from Malta as "rather rare. I met with it on the 26th November, 1860, and on the 3rd December, same year; and Dr. Adams observed two or three others, of which he obtained one. I have another, which was taken in May 1862. Individuals have also been captured in December and January." Lord Lilford found it very common in Corfu during the winter, and observed one or two individuals during the summer months. Some eggs taken in Epirus were brought to him; and he believes them to have been those of this species. Lindermayer records it as common in Greece in the winter; but he never observed it on the islands; and Messrs. Elwes and Buckley record it as common in Turkey. I never met with it on the shores of the Danube; but my friend the late Mr. Seidensacher told me that it passes through Styria in October and November, and again in March, and he found it breeding in the Bacher-Gebirge. It occurs in Southern Russia, being, Professor von Nordmann writes, "generally distributed along the shores of the Black Sea;" and Professor Brandt states that it occurs in the Caucasus, whence Mr. Kolenati sent several specimens to St. Petersburg. I do not find any record of its occurrence in Asia Minor, except that by Strickland, who obtained it at Smyrna in December, but considered it rare there. Canon Tristram writes that "*Accentor modularis* only just makes good its claim as a bird of Palestine by residing in the Lebanon throughout the year, where, however, it is very scarce."

It has occurred in Northern Africa. Dr. von Heuglin mentions having seen one in Egypt; and Loche records it as being of rare occurrence in Algeria.

To the eastward it is met with in Persia, whence Mr. Blanford procured specimens, one of which he has kindly lent to me for examination. It is not recorded by any of the Siberian travellers; but Mr. Swinhoe writes that Père David saw the head of a bird procured at Pekin, which he identified with that of the present species; it is possible, however, that it may have belonged to the Japanese form (*A. rubidus*)—of which I have not been able to examine a specimen, but which Temminck and Schlegel describe in the 'Fauna Japonica' as being very closely allied to *A. modularis*, merely differing in having the back washed with purple, and in lacking the dark brown stripes on the flanks. The specimen obtained in Persia by Mr. Blanford agrees precisely with the measurements of *Accentor rubidus*, as given by Professor Schlegel in the 'Fauna Japonica;' and it likewise closely resembles the figure on his plate of that species; but the flanks are slightly marked with brown. It would thus appear to be an intermediate race between *Accentor modularis* and *Accentor rubidus*, differing but slightly from either, though approaching nearest to the latter race.

It is scarcely necessary to say much respecting the habits of so common and well-known a bird as the Hedge-Sparrow; for there are but few gardens in England where it is not regularly seen, creeping about amongst the low bushes or in the thick hedge-bottoms, often suffering any one to approach within a few feet of it. I may, however, be excused in quoting the following notes from the pen of that most careful and observant of field-naturalists, Macgillivray:—"Come

here, station yourself at the window, and observe the little brownish grey birds that are moving about under the shade of that *Laurocerasus*. What can they be looking for there, in the middle of winter, when surely very few insects are to be found? Yet they shuffle along, with short steps, with a half-hopping and half-walking movement, in a sort of crouching posture, looking intently on the ground, and every now and then pick up some small article, apparently too minute for us to perceive it were we quite close to it. Quietly, peaceably, and industriously they search among the tiny protuberances of the soil, gently raising and shaking their wings as they proceed. A person passes within a few yards of them, and yet they merely move a little way off, or quietly hop into the bush, where they frisk about among the branches. A pert Robin drops in among them, and they disperse, not liking so troublesome a companion; but they show no fear of the Sparrows that have perched beside them, nor of the Thrush that stands on one of the branches. They sometimes pick up the small crumbs that are scattered near the door; but familiar and gentle as they are, they never enter the house, in the most severe weather, or under any enticement.

"At all seasons these birds are seen in the gardens, and by the hedges, near houses; but during winter and spring they are much more numerous there; for those which in summer preferred remote places, then approach the habitations of man, although some still keep aloof. Hawthorn hedges are their favourite haunts; and on the ground along their bases they search for small seeds and insects, frequently making short pedestrian excursions into the fields on the one hand, or the footpaths on the other. They flit about among the bushes with great liveliness, often running along the ground, and seldom perching on the upper branches. Owing to the dulness of their colouring, and the celerity with which they take shelter, they are not very readily perceived; but they can scarcely be called shy, under any circumstances; and they often allow a person to approach within a few yards, or even feet, without showing any apprehension. Even in winter they are not at all gregarious; for you seldom find more than two or three together, and it is very rare to see two flying in the same direction. Their flights are generally very short, and without undulation.

"After the middle of spring, they are less frequently seen about houses; and at all seasons they are to be found in hedges and among bushes, seldom appearing in open ground or upon trees. In fine weather they sing even in winter, nor is there any season of the year at which they are entirely mute; but from the middle of spring to the end of May especially, they are heard chanting their short, clear, pleasantly modulated, but not remarkably mellow song, generally when perched on a twig, but sometimes on the ground or a wall. During the breeding-season, the shake of their wings increases to a shuffle or kind of flutter, which they execute at short intervals; and their habit can hardly fail to be observed by the most incurious. Their ordinary cry is a slight cheep. They are not by any means quarrelsome, either among themselves or with other small birds; and they seem to pair in the quietest possible manner.

"In dry sunny weather in summer I have watched them basking on the road near a hedge. They would stand quite motionless, their legs much bent, their tail touching the ground, their wings spread a little, and their plumage all ruffled; and thus they remain a long time, seeming to enjoy the heat exceedingly, and suffering a person to approach very near them before they fly

off. At all seasons, but especially in winter, I have found their stomach to contain small seeds of various kinds and frequently those of grasses; but they also feed on insects, pupæ, and larvæ. They use a great quantity of minute fragments of quartz and other hard minerals, which are seldom met with in the gizzards of the *Sylviæ*; so that with respect to feeding they resemble the Larks and Thrushes.

"They nestle from the middle of March to the beginning of May, choosing very frequently a hedge, or a holly bush, but often contenting themselves with any low and moderately thick shrub; and as the nest is often completed before the leaves have made much progress, it is very liable to be destroyed by boys. It is bulky, from four and a half to five inches in diameter externally, its interior two inches and a quarter across, and nearly two inches deep. One before me is composed externally of a few hawthorn twigs, a great quantity of dry grass, and then a thick layer of moss. The lining is a quarter of an inch thick, and composed of hair of different kinds, with a considerable quantity of wool. Another is lined with horse- and cow-hairs, intermixed with a large quantity of the fur of the hare. The eggs, five or six in number, are of a fine greenish blue colour, and have an oval rather pointed form, with a glossy surface, their longitudinal diameter varying from nine to ten twelfths, the transverse from six and a half to seven twelfths. There are generally two broods in the season. Mr. Neville Wood remarks that none of our smaller British birds (the Field-Thrush excepted) will build in a tree or bush which already contains a nest, whether that nest be deserted or not. I have seen, however, in a honeysuckle bower three nests of small birds—namely, the Thrush, the Green Linnet, and the Hedge-Chanter. The Sparrows sometimes build among Rooks' nests." The Hedge-Sparrow feeds more especially on insects during the summer season, but in the autumn and early spring will, when insect food is scarce, eat various sorts of seeds, especially those which contain oil, as the poppy, and grass seeds of various sorts, *Carex* seeds, and those of *Polygonum aviculare*. It picks up insects on the ground, or from the bushes, and does not appear to catch winged insects. The young are fed entirely on insects of various sorts, especially small caterpillars. Its call-note is sharp and somewhat harsh, resembling the words *tri, tri, tirri*; and its song, though not particularly high in quality, is agreeable and not altogether unvaried, being not unlike that of the Wren, though it is not so varied or sweet. According to Mr. Weir, a correspondent of Macgillivray's, it sings during the night; for he writes as follows:—"In a holly hedge about thirty yards from my bedroom window, when I resided at Lauriston, near Edinburgh, I have again and again heard the male, about eleven o'clock, in the darkest evenings of autumn and winter, and even when it was cold and frosty, go through his usual notes. At the regularity of the time when he poured them forth, I have often been astonished." "Possibly," Macgillivray remarks, "this regularity may have depended upon that of my friend, who in retiring to bed may have sent a blaze of light through his window upon the hedge."

I will add no further description of the eggs of this familiar bird to that above quoted from Macgillivray; and, indeed, it is scarcely necessary to describe them at all, so well are they known to every schoolboy.

The specimens figured and described are in my collection, excepting the young bird, the figure of which was taken from a live specimen in the possession of our artist, Mr. Keulemans.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Kent (*H. E. D.*). *b*, ♂. Olympus, Macedonia, November 11th, 1869 (*Dr. Krüper*). *c*, *d*, ♂. Piedmont, winter. *e*, ♀. Piedmont, November 1869 (*Count Salvadori*). *f*, ♀. Volga, May (*Möschler*).

E Mus. Howard Saunders.

a, ♂, *b*, ♀. Seville, December 3rd, 1869. *c*. Andermatt (*Nager-Donazians*). *d*, ♂. Olympus, December 22nd, 1869 (*Dr. Krüper*).

E Mus. Ind. Calc.

a. Koomeghed, Persia, 6000 feet, April 1870 (*Major St. John*).

Family PANURIDÆ.

Genus PANURUS.

Parus apud Linnæus, Syst. Nat. i. p. 342 (1766).
Panurus, Koch, Baier. Zool. p. 202 (1816).
Calamophilus apud Leach, Syst. Cat. M. & B. Brit. Mus. p. 17 (1816).
Mystacinus apud Boie, Isis, 1822, p. 556.
Ægithalus apud Boie, Isis, 1826, p. 975.
Paroides apud Gray, Gen. of B. i. p. 193 (1847).

It has been a moot question where the present genus should be placed. By all the earlier authors it was placed amongst the Paridæ; but Blyth asserted that it was far more closely allied to the Shrikes. Some years later, however, he modified his views and placed it near *Estrelda*. Macgillivray, on the other hand, considered that, though distantly related to the Reed-Buntings, it is closely related to the American genus *Ammodromus*, and in 1864 he placed it between *Pyrrhula* and *Certhia*. In 1863 Dr. Jerdon treated it as being related to the Timeliidæ near *Pyctorhis*; and when Mr. Sharpe and I worked out the range of this species, we concluded that it was more closely allied to certain Drymœcine forms, especially *Sphenœacus*. Professor Sundevall, again, removed this genus from the Paridæ and placed it in the family Viduinæ; but Mr. Bartlett is of opinion that it is closely allied to *Liothrix*, especially as regards its nest and eggs; Professor Parker, however, assures me that, judging from the cranial and palatal features, it is a Titmouse, though an aberrant one, and not distantly related to *Suthora*; I have therefore decided to place it in a separate family next to the Paridæ. When Mr. Sharpe and I wrote the article on the Bearded Reedling we decided to use the generic title of *Calamophilus*, Leach; but further research has shown me that we were wrong in so doing; for Leach (who, in 1816, first used this title) gave no generic characters whatever, whereas Koch (who, in the same year, proposed the name *Panurus*) gave a tolerably full generic diagnosis, and his name should therefore be used in preference to that of Leach, and the species should stand as *Panurus biarmicus*.

This species, which is the representative of the genus, inhabits the Palæarctic Region only. It is a lively active bird, frequenting reed-covered places in the fen-districts, and feeds on insects, seeds, and small mollusks.

It builds an open cup-shaped nest amongst the reeds, and deposits white eggs finely speckled, splashed, and irregularly lined with reddish brown.

Panurus biarmicus, the type of the genus, has the bill subconical, upper mandible broader and longer than the lower one, and decurved towards the tip; nostrils basal, oval, partially covered with reflected bristly feathers; wings somewhat short, having ten primaries, the first quill shorter than the coverts, the second slightly shorter than the seventh, the third, fourth, and fifth nearly equal, the fourth being the longest; tail very long, much graduated; tarsus long, covered in front with five plates and three inferior scutellæ; feet tolerably stout, the outer toe shorter than the inner one; claws long and stout; feathers on each side of the throat elongated, forming, as it were, moustaches.



CALAMOPHILUS BIARMICUS.

CALAMOPHILUS BIARMICUS.

(BEARDED REEDLING.)

Parus biarmicus, Linn. Syst. Nat. i. p. 342 (1766).
Parus russicus, S. G. Gmelin, Reise durch Russl. ii. p. 164, t. 10 (1774).
Calamophilus biarmicus, Leach, Syst. Cat. Mamm. &c. Brit. Mus. p. 17 (1816).
Panurus biarmicus, Koch, Syst. d. Baier. Zool. p. 202 (1816).
Mystacinus biarmicus, Boie, Isis, 1822, p. 556.
Ægithalus biarmicus, Boie, Isis, 1826, p. 975.
Mystacinus russicus, Brehm, Vög. Deutschl. p. 472 (1831).
Mystacinus arundinaceus, Brehm, Vög. Deutschl. p. 474 (1831).
Mystacinus dentatus, Brehm, Vög. Deutschl. p. 474 (1831).
Calamophilus barbatus, Keys. & Blas. Wirb. Eur. p. xliii (1840).
Paroides biarmicus, Gray, Gen. of B. i. p. 193 (1847).
Panurus barbatus, Saunders, Ibis, 1871, p. 208.

Mésange à moustaches, French; *Bart-Rohrmeise*, German; *Het Baardmannetje*, Dutch; *Skjæg-meise*, Danish; *Basettino*, Italian; *Sinitsa Borodavka*, Russian.

♂ pileo pulchre cano: loris et striga mystacali nigerrimis: dorso toto fulvescenti-rufo: scapularibus albis: tectricibus alarum minimis cinereis fulvo lavatis, medianis nigris rufo marginatis, majoribus rufis ad basin nigris: margine alari et ala spuria albis, hac nigro varia: remigibus brunneis, primariis late albo marginatis: secundariis rufo marginatis: pennis dorsalibus pogonio interno albo: cauda ferruginea, rectricibus extimis albicanti-cinereo lavatis, duabus proximis extus nigricanti-cinereo lavatis: gutture et corpore subtus medio albicantibus: corpore lateribus fulvescenti-rufis, pectore superiore pulchre roseo tincto: crisso nigerrimo: subalaribus albis: rostro aurantiaco: pedibus nigris: iride aurantiaca.

♀ fulvescenti-rufa, pileo concolori: ptilosi reliqua ut in mari colorata, sed striga mystacali nulla et coloribus conspicue sordidioribus distinguenda.

Juv. feminæ adultæ similis, sed pileo lateraliter et dorso nigro longitudinaliter notatis: cauda dilute nec læte ferruginea: rostro brunnescenti-corneo, flavo tincto.

Pull. læte fulvus, dorso medio nigro: tectricibus alarum et remigibus nigris, secundariis interioribus fulvo marginatis: cauda nigra, rectricibus mediis fere fulvis.

Adult Male. Head clear blue-grey; lores, a demi-eyebrow, and a moustachial stripe, consisting of long pointed feathers, black; back rich fawn; scapulars white, somewhat tinged with fulvous; least wing-coverts greyish, edged with fulvous, the median coverts for the most part black, tipped with fawn, the greater coverts so broadly edged with fawn that they seem to be entirely of this colour, the black bases of the feathers being entirely hid; edge of the wing white; primary coverts black, very broadly edged

with white on the outer web; quills brownish, the primaries edged along the outer web with white, the secondaries margined with fawn, excepting the inner web of the dorsal quills, which are white; tail deep rusty red, almost amounting to chestnut, the external feathers tipped with grey, which colour forms an edging to the two outermost feathers; throat and upper breast greyish white, the sides of the latter suffused with a delicate blush of pink; sides of the body rich fawn; centre of the abdomen fulvous white; vent and under tail-coverts jet black; under wing-coverts white; bill orange-yellow; feet black; eye orange-yellow. Total length 6 inches, culmen 0·35, wing 2·35, tail 3·3, tarsus 0·75.

Female. Greyish fawn above, slightly tinged with brighter rufous here and there; the rest of the upper surface of the body as in the male, but not nearly so bright, and the scapulars and edgings to the secondaries greyish white, with a strong tinge of fulvous; lores and cheeks dirty white; throat and centre of the body greyish white; otherwise coloured as in the male, but has not the moustachial stripe, and the under tail-coverts fawn instead of black.

Young. Exactly similar to the adult female, but has the crown laterally striped with black, as also the the centre of the back, where the stripes are very distinct; the bill horn-brown, tinged with yellow, more especially on the lower mandible.

Young in down. General colour very pale buff; the entire centre of the back jet-black; the wing-coverts and quills black, tipped with buff, the black predominating; tail for the most part black, but the centre tail-feathers fawn; under surface of the body fulvous, the sides and flanks rich fawn; bill dull horn-brown; feet yellowish.

The Bearded Reedling is found in nearly every country of Europe, but only in localities suitable to its habits. Mr. G. R. Gray, in his recent 'Hand-list,' has made mention of a second species of *Calamophilus* from Kamschatka, which he calls "*C. sibiricus*, Bp." No reference is given whereby we may be able to examine the original description; and we regret that we have been unable to find the work in which it has been published. This is only one out of a thousand instances where the 'Hand-list' fails to assist the student; and we must regret that the labour bestowed on this stupendous compilation has not resulted in a benefit for the working ornithologist. We cannot help thinking that there must have been some mistake with regard to this species of the late Prince Bonaparte, as no *Calamophilus* has ever been discovered in the vast tracts of country explored by the Russian naturalists.

In England the Bearded Reedling, always a local bird, has of late years become still more localized in its habitat, as modern improvements have encroached on its favourite haunts. Mr. A. G. More gives its distribution in the British Islands as follows:—

"A very local species, apparently now restricted to a few localities in Norfolk and Suffolk, and to the reed-beds along the banks of the Thames. Still breeds in Surrey (*Rev. J. C. Atkinson*), and probably in Essex (where the bird has been noticed), in East Suffolk (*Rev. J. Farr*), in Norfolk (*Mr. H. Stevenson*), and possibly in Lincolnshire, which is one of the five counties mentioned by Hewitson. Extinct in Sussex (*Mr. Knox*); extinct also in Cambridgeshire and Huntingdon (*Mr. F. Bond*). Kent, Gloucester, and Cowbet in Lancashire are given as localities by Montagu; and Mr. Waterton tells me that a pair once built by the side of the lake at Walton Hall."

It can only of late years have become extinct in Sussex; for Mr. Knox, writing in 1849, said

that it was "occasionally found in situations adapted to its habits, but decidedly less numerous in Sussex than in many other counties nearer the metropolis. Was formerly not unusual in the neighbourhood of Pevensey, but is now rare, most of the reed-beds having been removed to admit of the water running freely through the dykes. A male and female in my collection were obtained near the ruins of Amberley Castle. A pair were also shot at Fishbourne, near Chichester, by a retired military serjeant of the name of Carter, a very successful gunner, who has had the good fortune to meet with some of our rarest birds in that neighbourhood."

In most of the southern counties of England the present species is sparingly found, and Mr. J. Brooking Rowe says that in Devon it is "scarce, but specimens have been obtained both in the south and middle of the county." Mr. J. Gatcombe writes to us:—"I have never seen a wild or even a Devonshire-killed specimen, although it is *said* to have been met with in a few instances. During the last few years I have bought several pairs in the London market killed in Britain." Mr. Rodd has a specimen from St. Levan, in Cornwall, "the only recorded example in this district;" he says it is very rare in that county.

In Norfolk the present bird is still found in considerable numbers, as will be seen by the accounts given by Messrs. Stevenson and Gurney below. In Scotland the Bearded Reedling seems to be unknown; and only one instance, scarcely well authenticated, is known of its occurrence in Ireland.

In Sweden it is not found; but, according to Kjærbölling, it is met with in Denmark, where, however, it is rare, and has been found in Southern Jutland. In Holland Professor Schlegel says it is found chiefly to the eastward of Rotterdam, and has not been observed breeding further north than Stompwijk; it is a migrant, leaving in October and returning in April. Mr. Labouchere also writes to us as as follows:—

"These birds are comparatively common in Holland, especially in the marshes round Amsterdam, where they are yearly caught in great numbers by the bird-catchers, the time to catch them being the early part of October, when the old birds go on foraging expeditions accompanied by the young ones to the number of six or seven in a flock. They are caught by means of nets, which are laid down among the reeds, while decoy-birds are placed at a short distance."

In Belgium, De Selys-Longchamps records it as accidental, during the autumn migration, near Liége, occurring more regularly at Brabant and Antwerp; and in Luxembourg De la Fontaine observes:—"It visits us in winter, generally in November found in the Moselle, particularly between Sierck and Remich, and in the neighbourhood of Thionville, also on the canton of Redange, on the wooded borders of the Attert."

In France, Degland and Gerbe say it is found in some parts during migration; Jaubert and Barthélemy Lapommeraye state that it is very rare in Provence, seen at long intervals, generally on the Camargue or borders of the Rhone. In Savoy, Bailly says it is an accidental visitor.

Little has been recorded concerning the Bearded Reedling in Italy. Mr. Giglioli, in his paper on birds observed near Pisa by him, says that he found it pretty numerous in the Maremma.

According to Malherbe, it is "found in Sicily throughout the year, particularly in the marshes of Catania, the Lake of Lentini, on the banks of the Anapus, and the River of Cyane."

In Spain, Mr. Howard Saunders writes:—"I observed this species in the reed-beds of the Albufera of Valencia, at the end of May 1870, and was assured that it bred there."

The Bearded Reedling is an uncommon bird in Germany, being only occasionally found there, and only in certain localities. Dr. Anton Fritzsch, however, says it is abundant in Hungary, but probably found in Bohemia only during migration. In Albania it was observed by Lord Lilford; and in Greece Vôn der Mühle says it is often seen during the autumn. Lindermayer says it is one of the rarest of the "Titmice," and frequents the bush-covered swamps in Northern Greece.

Mr. Robson informs us, in a letter, that "this species is found in Turkey in Europe and Asia Minor. It has been taken in the neighbourhood of Varna, and in the marshes on the Danube in Europe, also near Smyrna in Asia Minor."

Radde writes as follows regarding its occurrence in Russia:—

"I saw this Titmouse on the Bug in small families of from five to eight individuals. Their movements amongst the rushes are most graceful; their song consists of a plain twitter, composed of similar notes to those of the Blue Titmouse. In the large forests of rushes (for they may well be called thus, as one cannot get through them without using a hatchet, and the single rushes often stand 8 to 10 feet high) it is difficult to procure so small a bird, as one cannot follow it up if it is only wounded and not killed outright. The flight is a succession of short, sharp half-circles."

In Southern Russia, Professor A. von Nordmann records it as rather common on all the shores of the rivers which are supplied with reeds, and in the salt lakes, whence it wends its way sometimes into the adjoining gardens. We have specimens also in our collection from the Wolga.

As it name denotes, the present species affects only certain localities; and where the thickets of reeds are most dense, there is the home of this lovely little bird. Like Titmice it is lively and active, and climbs about the reed-stems after food as they do amongst the branches of trees, and appears to be always busily employed. They are generally to be found in families, and but seldom, if ever, in large flocks. Their flight is light, and much resembles that of the Long-tailed Titmouse. They are seldom found away from the reeds or the neighbourhood of water, and are strictly fen-birds in the fullest sense of the word.

With us in England they are residents; but on some parts of the Continent, according to Naumann, they are partial migrants, owing chiefly to the reeds where they are found during the summer drying up or being cut down to burn; and he states that their migrations take place during the night. In the vast fen-districts of Holland, where they are most abundant, they are residents, and are found chiefly near the salt water.

Respecting their note and food, Naumann says, "they continually utter a short melodious note, *zit-zit*, resembling that of other Titmice and Gold-Crests; but this is, however, uttered harsher or sharper, *zips-zips*, almost like the note of the Hawfinch. When a flock is scattered they call querulously to each other, uttering a lengthened shrill note. I have also heard them use a call-note, which, in the distance, appears to resemble that of the Bullfinch, but was higher in tone. The song is very simple, merely a low twitter, in which are mingled a few harsh notes resembling the so-called song of the common Sparrow. In the pairing-season they twitter and call continually, and express their pleasure in a few notes, which sound like *zit zrrrr*. They

feed on all sorts of small insects, as also do their progeny, which frequent the water and reeds, and they also eat the seeds of the reed.

"In summer, when insects are abundant, they do not eat any seeds, but pick off from the leaves and stems of the reeds, as also the roots of water-plants that are uncovered by the water, gnats, spiders, flies, ephemera, water-moths, leaf-lice of various sorts that infest the plants, small beetles, and many kinds of insects and their larvæ, and in winter seek out the pupæ of the small fen-frequenting insects. In the autumn, when insects are less abundant and the seeds of the reeds are ripe, they climb about the reed-stems and on the waving panicles, amongst which they often also find insects. The seeds of the common reed (*Arundo phragmitis*) form their chief subsistence during the hard weather; but they probably do not disdain the seeds of other water-plants."

They make excellent cage-birds, and are indeed said to have been first introduced into England as such. Our artist, Mr. Keulemans, has a couple in a cage, which were brought over from Holland, and we have often been amused to see how affectionate they are towards each other. When roosting they get close together, and the male, who appears to be the pattern of a model husband, generally takes the outside place on the perch and puts his wing over his mate to protect and keep her warm during the night. Indeed the Bearded Reedling is a particularly affectionate little bird, and is very tame in its disposition. Professor Von Nordmann writes:—

"The great agility of this bird does not prevent its being so tame and docile that I have succeeded in capturing several individuals hopping on the ground in the gardens by the aid of a little birdlime placed on the end of a stick."

The following well-known description of the Bearded Reedling has been often quoted by writers on the history of this species; but as no account of the bird's habits would be complete without the well-written though familiar phrases, we extract them forthwith from 'Loudon's Magazine,' to which they were contributed by an anonymous correspondent. He had found the bird near Barking Creek, in Essex, and says:—

"Arrived on our ground, we traversed it for some time without success, and were about to leave it, when our attention was roused by the alarm-cry of this species, and, looking up, we saw eight or ten of these beautiful little creatures on the wing, just topping the reeds over our heads, uttering in full chorus their sweetly musical note, which resembles (if it may be likened to a word) the monosyllable *ping*, *ping*, pronounced at first slow and single, then two or three times in a more hurried manner; it may be compared to the music of very small cymbals, is clear and ringing, though soft, and corresponds well with the delicacy and beauty of the form and colour of the bird. We saw several flocks during the morning, or, what is more probable, the same flock several times. Their flights are short and low, only sufficient to clear the reeds; on the seedy tops of which they alight to feed, hanging, like most of the tribe, with the head or back downwards. If disturbed, they immediately descend by running, or rather by dropping. The movement is rapid along the stalk to the bottom, where they creep and flit, perfectly concealed from view by the closeness of the covert and the resembling tints of their plumage."

The accompanying notes are from the pen of the late Mr. J. D. Hoy, who is well known to have been an accurate observer of the habits of birds:—

"The borders of the large pieces of fresh water in Norfolk, called Broads, particularly

Hickling and Horsey Broads, are the favourite places of resort of this bird; indeed it is to be met with in that neighbourhood wherever there are reeds in any quantity with fenny land adjoining. During the autumn and winter they are found dispersed, generally in small parties, through the whole length of the Suffolk coast wherever there are large tracts of reeds. I have found them numerous, in the breeding-season, on the skirts of Whittlesea, near Huntingdonshire; and they are not uncommon in the fenny districts of Lincolnshire. Whether they are to be met with further north I have had no means of ascertaining; but they do not appear to have been noticed north of the Humber. It begins building in the end of April. The nest is composed, on the outside, of the dead leaves of the reed and sedge intermixed with a few pieces of grass, and invariably lined with the top of the reed, somewhat in the manner of the nest of the Reed-Wren (*S. arundinacea*, L.), but not so compact in the interior. It is generally placed in a tuft of coarse grass or rushes, near the ground on the margin of the dikes in the fen, also sometimes fixed among the reeds that are broken down, but never suspended between the stems. The eggs vary in number from four to six, rarely seven, pure white, sprinkled all over with small purplish red spots intermixed with a few small faint lines and markings of the same colour; size about the same as those of the Greater Titmouse, but much more rounded at the smaller end. Their food during the winter is principally the seed of the reed; and so intent are they in searching for it, that I have taken them with a birdlime twig attached to the end of a fishing-rod. When alarmed by any sudden noise, or the passing of a Hawk, they utter their shrill musical notes (which your correspondent has well described), and conceal themselves among the thick bottom of the reeds, but soon resume their station, climbing the upright stems with the greatest facility. Their manners in feeding approach near to the Long-tailed Titmouse, often hanging with the head downwards, and turning themselves into the most beautiful attitudes. Their food is not entirely the reed-seed, but insects and their larvæ, and the very young shell-snails of different kinds which are numerous at the bottom of the reedlings. I have been enabled to watch their motions when in search of insects, having, when there has been a little wind stirring, been often within a few feet of them quite unnoticed among the thick reeds. Were it not for their note betraying them, they would be but seldom seen. The young, until the autumnal moult, vary in plumage from the old birds; a stripe of blackish feathers extends from the hind part of the neck to the rump. Your correspondent has been informed that the males and females keep separate during the winter; but I have always observed them in company; they appear to keep in families until the pairing-time, in the manner of the Long-tailed Titmouse, differing in this respect, that you will occasionally find them congregated in large flocks, more particularly during the month of October, when they are migrating from their breeding-places." Mr. Stevenson has kindly drawn our attention to a letter addressed by Mr. Hoy to Mr. Selby in the year 1828, in which he speaks of this bird as abundant in reed-beds in Norfolk, and states that he saw many about Whittlesea Mere in 1826.

Mr. H. Stevenson, in the 'Birds of Norfolk,' says:—

"A long and intimate acquaintance with this species in our eastern fens enables me to add but little to the admirable description of its habits by the late Mr. Hoy (Mag. Nat. History, vol. iii. p. 328), as quoted by Yarrell, Gould, and other authors; but I cannot agree with Mr. Hoy in considering 'the end of April' as the usual time for these birds to commence building. I have

frequently known their nest completed, and the full complement of eggs laid, by the 7th and 8th of April, and others hard sat upon by the 17th, which would carry back the commencement of the nests to about the last week in March. I think, therefore, that the beginning of April may fairly be considered the average time, as the instances I have given were in no way referable to any particular mildness in the season, but occurred even when snow and frost prevailed later than usual. The nests are generally placed amongst the reed-stems, close to the water's edge, supported on the loose herbage that forms the foundation of the reed-beds, but never in any way suspended. The materials consist of the dead leaves of the sedge and reed loosely interwoven on the outside, whilst the feathery top of the reed forms the only lining. As soon as the breeding-season is over, these birds collect together in flocks, and perform short migratory trips from one broad to another in search of food, sometimes in sharp weather as many as forty and fifty together; and I am assured by the broad-men that even larger flights are occasionally seen. In the Cley and Blakeney marshes, near the sea-coast, the Rev. E. W. Dowell has observed this species in small numbers on two occasions, but only in the months of October and November; and as these were not seen throughout the winter, and I am not aware that their nests have been found in that neighbourhood, I should consider them as merely roving flocks, attracted by the reeds on the tidal marshes. When shooting at Surlingham in the winter months, I have more than once observed the arrival of a flock from some neighbouring broad, their presence over head being indicated by the clear ringing sound of their silvery notes, uttered preparatory to their pitching into the nearest reed-bed; and in autumn, after roosting in small parties on the reeds, they will fly up simultaneously soon after sunrise, swarming for a while like a flock of bees, and, uttering in full chorus their pretty song, disperse themselves over the reed-beds for their morning's meal. Delicate as these little creatures appear, I have found them during the sharpest frosts, when the Snipe had left the half-frozen waters for upland springs and drains, still busy amongst the reed-stems, as lively and musical as ever. It is greatly to be regretted that the demand for specimens, from their handsome plumage, should lead to the wholesale slaughter of the Bearded Tits throughout the winter; added to which, the price of late years offered for their eggs has caused a sensible diminution in their numbers. After the mild winter of 1862–63 these birds were more than usually plentiful at Hickling in the following spring, and from this locality alone about five dozen eggs were procured by one individual, nominally a collector, but in reality a dealer, who thus, for the sake of a few shillings, would go far towards exterminating this beautiful species (many old birds being also killed at the time), whose numbers we have no reason to suppose are replenished by Continental migrants. Already in one or two districts, where only a few years back they were very plentiful, scarcely a pair or two, to my knowledge, can now be found in the breeding-season. Happily our more common and useful species are, by recent legislation, protected in some degree from wholesale and indiscriminate slaughter; can no law be made applicable to the preservation of other indigenous and ornamental races, whose extinction would be a source of regret to every lover of nature? From inquiries made amongst the older broad-men in different localities, I find no reason to believe that these birds, as has been occasionally remarked, were not known in this county till of late years; and in Sir William Hooker's MS., the entries in which were made some fifty or sixty years ago, I find the following note:—'This beautiful bird is by no means unfrequent in the reedy parts of Surlingham Broad,

and remains there throughout the year.' The provincial name of 'Reed-Pheasant' is here applied to this species, from its miniature resemblance to the nobler 'longtails.'"

Mr. Stevenson has likewise sent us a MS. communication mentioning the earlier notice of the bird in Norfolk, as recorded below, by Mr. J. H. Gurney, jun. As the latter gentleman had already sent us his notes before Mr. Stevenson, we have printed them entire, though we desire to thank our kind friend for the additional information he has been so good as to write for the benefit of the present work.

Bailly has given the following account of the Bearded Reedling as observed by him in Savoy:—

"The habits of this bird are quiet and sociable: after the breeding-season they unite in flocks, which are sometimes large, and frequent the reeds or the bushes in their vicinity, climbing with grace and agility amongst the stems or branches, descending to the water's edge, and running about, like Wagtails, on the leaves of the aquatic plants, or on the ice, in search of food. They do not fear man much when he approaches; and only when disturbed or menaced do they fly off to some distance, or plunge into the reeds or plants; and they then express their discontent by uttering their ordinary note, which they repeat twice in succession, *theïn*, *theïn*. This cry somewhat resembles the silvery sound produced by twitching the strings of a mandoline.

"The Bearded Reedling feeds on winged insects, small coleoptera, and seeds of rushes and reeds. It nests in the rushes, in the dense herbage of the eyots, or on the edge of some mass of water-plants, more generally above the water than on the ground. It attaches its nest to some stems with filaments of hemp or nettle plant, and constructs it solidly of mosses outside, on the inside of dried grasses, then down of plants, particularly thistle-down, and the cotton off poplars and willows, mixed sometimes with small leaves. It is ball-shaped, with thick sides; and the opening, which is wide, is on the upper part of one side. The eggs are from five to seven in number."

Mr. J. G. Keulemans, who has had every opportunity of studying this bird in Holland, has given us the result of his experience as follows:—

"I believe this bird is found nowhere so abundantly as in Holland, especially in the provinces of Friesland and South Holland, where they occur regularly during the months of August, September, and October, in flocks of from five to twelve individuals. I have never seen them in winter, although it is said that some were observed in February, 1869, near the town of Middelburg, in the province of Zeeland. About twenty years ago they were rather plentiful in Friesland; and at that time few were observed in other parts of Holland; but gradually they returned, and are now again seen in flocks or pairs amongst the reeds in the marshy districts near Rotterdam. These charming little birds have always possessed great attractions for me, and were the constant companions of my youth. Being myself a native of Rotterdam, and acquainted with all the bird-sellers of the vicinity, I therefore had great opportunities of observing them in their natural state. Some years ago I was so lucky as to find a nest of this species containing four eggs; it was, as far as I can remember, about the beginning of June; and the locality where the nest was situated was at a place about two hours' journey from Rotterdam, near the so-called 'Cormoran Island.' It was freely suspended on a branch of a dead tree lying in the water so that only some of the twigs were seen above the

surface. The spot was overgrown with water-plants, reeds, alder, and pollard willows; the water also was covered with weeds. Many birds were breeding there, Warblers especially.

"The nest of the Bearded Titmice was composed of dry fibres of reeds and grass, interwoven with some spiders' webs and roots, while some dead leaves were arranged inside, and formed, together with the bloom of the sedge, a kind of loose lining. The nest was shaped like a ball, the opening being very narrow, in size it agreed with that of the Sedge-warbler, but more rounded and much more soft and flexible. The four eggs were nearly hatched, and were of a pinkish-white colour, with two or three brownish streaks on the larger end; one, however, was altogether unstreaked. Both old birds made a great noise when I captured their little home; both incessantly uttered their anxious note "*churr, churr*," flying round about me and performing a series of rapid movements.

"In its motions, as in its general economy, the Bearded Titmouse has something very peculiar. In some respects it approaches, as regards its movement, either the Long-tailed Titmouse or some species of *Drymœca*. It is as lively as the latter, but not so vigorous, and continually restless as the former. It is a very delicate little bird, though nimble enough; it is fond of society and an undisturbed life. The old pair and the young family when flying together evince great affection for each other. Though heard throughout the day, they are seldom seen, as they conceal themselves so well that none are to be noticed, notwithstanding that the whole flock is climbing about the reeds within a few feet of the observer.

"When the seeds of the sedge are ripe, and insects concealed among the hairy substance of the dried sedge-blossoms, then these beautiful little birds may be observed balancing on the tops of the plants, hanging and turning, spreading their wings, a charming sight to see. As far as I have observed, they feed on insects and very small snails, which they swallow with the shell.

"The sexual difference is not well known; and in several figures given of this species the same inaccuracy always occurs, namely in the colours of the head. The hen bird throughout its life has two dark stripes on the occiput; the spots on the back disappear in the very old female, though they may be still present in adult individuals.

"The young ones when leaving the nest are very pale, almost sandy white, with a large black spot on the back, and no distinct stripes on the occiput. In the females these indications of a stripe become more distinct after moulting, but entirely disappear in the young ones of the year of the male sex. The moulting takes place six or seven weeks after having left the nest. I have once seen an individual, caught in September, of a very pale plumage, though distinctly exhibiting the characters of the male; but the feathers of the back were more or less spotted, and the under tail-coverts mottled with white.

"Bearded Titmice have no real song, their vocal powers being rather limited. Nevertheless they produce peculiar notes for expressing their different feelings. When rejoicing in each other's presence, or when one perceives the arrival of its mate, they utter repeatedly their note, '*ptjink, tjinck*.' When disturbed, frightened, or caught, both sexes produce a very peculiar sound, like *tsjirrr-irr irr rrrr*. Distress or anxiety is expressed by *ee-arrh ee arr-chie-ur*. When uttering the latter they erect the body, bow the head downwards, and puff the feathers of the head and neck. I made this observation myself, and have tested it on several occasions, and now write it down with a bird before me mourning for the loss of his wife. The sound is thus described with the

advantage of direct observation. Every evening about twilight the unhappy male exhibits every proof of greatly distressed sentiments; he has lost his liveliness, and does not forget his mate.

"When sleeping they creep very close together, and one lays its wing on the back of the other. If one happens to go out of its cage (which I sometimes allow them to do), the other is immediately after it; and no greater alarm can be than when one is separated from the other, no greater joy than when they are together again. Rarely does a Bearded Titmouse clean or arrange its own feathers: the male looks continually after the female, the female after the male; if a feather is turned or out of its place in one, the other immediately redresses it. Often they nibble each others heads; and especially the male bestows this kind of gallantry upon the female. When the latter feels inclined to be petted, it comes near its mate and puts the head a little downwards, which is no sooner done than the required attention is performed by its companion."

Mr. John Henry Gurney, jun., who is particularly devoting his attention to the study of British birds, has sent us some extracts from his note-book:—

"I have bought specimens in Leadenhall market, and find that Dutch examples are larger than English ones. All the females which I have seen have had some trace of the black markings on the back, which, however, seems to be entirely lost in the adult male. Yarrell makes the moustache double, which is quite a mistake, as pointed out by Mr. Blyth, who did the outline for the picture; and in the description of the female he omits to say that the head is spotted with black.

"In the few visits I have paid to the *broads* I never met with any, though I once saw six brought into Sayer's shop in Norwich; they are notorious for roving in winter. I was told the name of a man of independent property who advertised great numbers of their eggs for sale in the 'Zoologist,' which he got from Surlingham, thus for the sake of a few shillings going far to exterminate the species. This famous broad is well depicted in Stevenson's 'Birds of Norfolk.' On my last visit there I was told by Trent, the marshman, that Bearded Tits were very tame, and he once shot sixty for a Mr. Sexton, the agent or foreman of a London taxidermist. The wanton destruction to which this species has been subjected has been loudly spoken against by many writers. The same marshman had once taken sixty eggs for a well-known Yarmouth collector.

"Though never got in Durham, the Bearded Titmouse has occurred in Cleveland, which is just on the other side of the Tees (Zool. 1135).

"Sir Thomas Brown, of Norwich, sent Ray a picture representing 'a little bird of a tawny colour on the back, and a blue head, yellow bill, black legs, shot in an osier car, called by Sir Thomas, for distinction's sake, *Sibrella*,' which I have no doubt was a male Bearded Titmouse, though the moustache is not mentioned. I believe this passage is in 'A collection of English words not generally used; with catalogues of English birds and fishes,' by Ray, 1674. At all events it is an extremely early reference to the bird, and has never been taken notice of. Some of our early authors, and particularly Edwards, call this bird the 'Least Butcher Bird;' and our later ones place it next to the Waxwing; but its affinities I consider are really with the Reed-Bunting, as shown by Macgillivray.

"M. Buchillot informed me that Malherbe was the first to add the Bearded Tit to the fauna of Lorraine. According to Fournel they have been several times seen at Longeville ('Faune de la Moselle,' p. 196), which is where he shot them. It has been killed as near London as

Charlton (*Hutchinson & Collingwood*), Sydenham Common, and Blue Anchor Lane, near Deptford (*Graves*)."

Mr. W. H. Dikes, another correspondent to Loudon's Magazine, thus writes on the food of the present species:—

"This is stated, in all the descriptions which I have consulted, to be the seeds of aquatic plants. Having, however, lately had an opportunity of examining three specimens, I find that account is erroneous; the crop did not contain a single seed, but, on the contrary, was completely filled with the *Succinea amphibia* in a perfect state, the shell being unbroken. These shells were singularly closely packed together—the crop of one, which was not larger than a hazel-nut, containing twenty, and some of them of a good size; it contained also four of the *Pupa muscorum*. Of all these mollusca the shell was quite uninjured, which, when the fragile nature of that of the *Succinea* is considered, is somewhat extraordinary. The shell appears to be passed into the stomach in the same perfect state, as I discovered one (which I presume had been recently swallowed) quite entire. They are not, however, voided in this state; for I found the stomach to be full of small fragments of shells in a greater or less degree of decomposition. This work of destruction is accomplished by the action of the stomach, aided by the trituration of numerous sharp angular fragments of quartz, which had been instinctively swallowed, and by which the minute division of the shells is most completely effected."

The stomach of a bird killed near Ely, and examined by Mr. J. H. Gurney, jun., was found to contain grass-seeds and a considerable quantity of coarse river-sand.

The nest of the Bearded Titmouse is thus described in the 'Zoological Journal,' vol. iii. pp. 85, 86:—

"It was placed near the ground, being sustained only an inch or two above the surface by the strength of the stems of the coarse grass upon which it was fixed; it was composed entirely of dried bents, the finer ones forming the lining, and others, increasing in substance, made up the interior. The eggs were four in number, rather smaller than those of the Great Titmouse (*Parus major*), and less pointed, white, and sparingly marked with pale red irregular lines or scratches."

Eggs in Dresser's collection from Holland and Norfolk are pure white, sparsely covered with small irregular scratches of dark reddish brown. They measure about $\frac{15}{20}$ in length by $\frac{11}{20}$ in width.

Just as we were going to press, the following interesting note arrived from Mr. Keulemans:—

"The young ones moult from September to October; and the moulting lasts nearly five weeks (in confinement), during which time the black moustaches gradually appear in the male bird. The young ones, after moulting, still remain much paler than the adults, the grey head of the old male being rather light and whitish, while the pinkish hue on the breast does not appear until the next spring.

"I have just received from Holland four individuals (two males and two females), which have been brought up from the nest last year. The males are very pale in comparison with the adult bird I had alive for two years, and which only just died. In the hens the dark spot on the back has changed into two distinct stripes, while a rather distinct indication of two streaks remains on the occiput. In the latter sex the colour of the plumage in general is just intermediate between that of the adult and the young ones."

Great difficulty has always been experienced by systematists in assigning the natural position of the genus *Calamophilus*; and the balance of opinion is still equally divided between those naturalists who affirm that it is allied to the Paridæ, and those who follow Professor Macgillivray, and consider that the nearest allies to the Bearded Reedling are the Emberizidæ. The bird had by common consent been placed with the Paridæ; and the name of "Bearded Tit," by which it is generally known, shows that popular opinion acquiesced in this generally received view of its affinities. But in 1840 Professor Macgillivray challenged the validity of *Calamophilus* being received as a Parine form, and referred it to his order of Huskers, believing its nearest allies to exist in the genus *Ammodromus*. Mr. R. F. Tomes, in an elaborate paper in 'The Ibis' for 1860, likewise advocates the Fringilline affinities of the Bearded Reedling. We do not quite agree with either one party or the other, as we believe that it is more closely allied to certain *Drymœcine* forms, especially the genus *Sphenœacus*. There is a certain resemblance to *Ammodromus*; but Dresser, who has seen the species of the latter genus in life, considers the habits quite different. We can hardly agree to the bird being congeneric with the species of *Ægithalus* &c. as placed by Mr. Gray in the 'Hand-list.'

For the loan of a beautiful series of specimens of the Bearded Reedling, we are indebted to our good friend Mr. John Henry Gurney, jun., and we have taken most of our descriptions of the different plumages from his examples. It seems that when the bird is in the nest the black marks on the back are very plain, occupying the entire central portion; and these markings continue for a long time after the bird is fully grown, lasting probably till the spring dress is assumed. In many collections we have seen these black-streaked birds marked as adult females; but they are often young males, as the old female certainly loses all traces of black dorsal streaks. This we have satisfactorily ascertained, as Mr. Keulemans has had a pair alive in a cage for a long time, and the hen has the head and back uniform, with just a few black markings on the former. These birds have been figured in the Plate; and in the distance a group of young ones will be seen, to show the way in which the back is marked in the immature bird. In winter the plumage is much duller than in summer, assuming a greyish tinge.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, b, c. Cambridgeshire (*Fox*). *d.* Sarepta (*Moeschler*).

E Mus. J. H. Gurney, jun.

a, b. ♀ *et pull.* Hickling, 1862. *c, d.* Ely, October 26th and November 2nd, 1868 (*J. Titterton*). *e.* ♂. Horning, 1860 (*Gunn*). *f, g.* Leadenhall Market (*J. H. G.*).

E Mus. Salvin and Godman.

a–g. Norfolk (*O. S.*).

E Mus. H. B. Tristram.

a. Leadenhall Market (*J. H. Gurney*).

Family PARIDÆ.

Genus ACREDULA.

Parus apud Linnæus, Syst. Nat. i. p. 342 (1766).
Acredula, Koch, Baier. Zool. i. p. 199 (1816).
Mecistura apud Leach, Cat. M. & B. Brit. Mus. p. 17 (1816).
Paroides apud C. L. Brehm, Isis, 1828.
Orites apud G. R. Gray, List of Gen. of B. p. 52 (1841).

This genus differs from *Parus* chiefly in having an extremely long tail and in having the tip of the upper mandible elongated and decurved. It inhabits the Palæarctic Region, ranging eastward to Japan. Four species only are found in the Western Palæarctic Region; and two others inhabit the Eastern Palæarctic Region. The species included in the genus are active restless birds, inhabiting groves and the borders of woods, resembling in habits the true Titmice. They feed on insects of various kinds, which they obtain amongst the foliage or pick off from the bark of the trees they frequent. They build an oval nest, with an entrance-hole in the side, which is attached to a branch, and deposit numerous small white eggs faintly dotted with red.

Acredula caudata, the type of the genus, has the beak short, stout, compressed, the upper mandible with the sides convex and sloping, the tip acute, elongated, and decurved; nostrils small, round, concealed by the feathers; eyelids with broad bare margins; wings moderate, rounded, the first quill short, the second shorter than the eighth, the fifth longest; tail long, straight, graduated; tarsi moderate, covered in front with four plates and three inferior scutellæ; feet moderate, slender; claws long, arched, extremely compressed, laterally grooved, acute; plumage soft and loose.



BRITISH LONG-TAILED TITMOUSE.
ACREDULA ROSEA
104

ACREDULA ROSEA.

(BRITISH LONG-TAILED TITMOUSE.)

Mecistura caudata, Leach, Cat. Mamm. &c. Brit. Mus. p. 17 (1816).
Mecistura rosea, Blyth, ed. White's Nat. Hist. of Selborne, p. 111, note (1836).
Mecistura longicaudata, Macgill. Hist. Brit. B. ii. p. 454 (1839).
Acredula rosea, Sharpe, Ibis, 1868, p. 300.
Parus roseus, Gray, Hand-l. of B. i. p. 234 (1869).
Parus caudatus, auct. britt. passim.

Bottle-Tom, Bottle-Tit, Long-tailed Mag, Huckmuck, Poke-pudding, Mum-ruffin, Bumbarrell.

Figuræ notabiles.

Yarr. Brit. B. i. p. 344; Gould, B. of Eur. ii. pl. 157, et B. of Gt. Br. part 2.

♂ vertice medio latè albo, fasciâ utrinque nigrâ a basi rostri suprà oculum ductâ et ad nucham nigram conjunctâ: interscapulio toto et dorso superiore nigris: scapularibus et dorso reliquo pallidè vinaceis, nigricante vix notatis: supracaudalibus nigris: tectricibus alarum nigris, majoribus interioribus vinaceo indistinctè lavatis et albido terminatis: remigibus brunneis, secundariis extùs albido limbatis, dorsalibus latiùs: caudâ nigrâ, rectricibus quatuor centralibus haud albo terminatis, reliquis extùs albo marginatis et intùs versùs apicem gradatim albis, exterioribus ferè omninò albis: facie laterali albidâ, regione auriculari nigricante striolatâ: gutture et pectore superiore albis, hôc indistinctè nigricante maculato: corpore reliquo subtùs rosascente, abdomine medio albido lavato: subalaribus albis: rostro nigro: pedibus nigris: iride nigrâ: annulo ophthalmico aurantiaco.

♀ mari omninò similis.

Adult Male in breeding-plumage. Crown dull white, rather broad; a black line extending from the base of the bill, above the eye, so as to border the crown on both sides, and joined to the nape; the whole of the latter, together with the interscapulary region and upper back, deep black; the scapulars and rest of the back dull vinaceous, with a few black markings; upper tail-coverts black; upper wing-coverts black, the inner greater coverts tipped with white and tinged with a slight vinaceous shade; quills black, the secondaries externally margined with whitish, the innermost ones more broadly bordered, but only on the outer web; tail black, the four middle feathers entirely so, the next just tipped with white on the outer web, and the rest white on the outer web and on the inner web towards the tip, gradually increasing in extent towards the outermost, which is almost entirely white; sides of the face dull white; the ear-coverts streaked with blackish; throat and upper part of the breast whitish, with a few blackish spots on the latter; rest of the under surface of the body pale vinaceous, the centre of the abdomen whitish; under wing-coverts whitish; bill black; feet blackish; iris dark brown; eye-ring orange. Total length 6 inches, culmen 0·3, wing 2·5, tail 3·6, tarsus 0·7.

Adult Female in breeding-plumage. Exactly similar to the adult male.

So far as we can at present ascertain, the present form of the Long-tailed Titmouse is confined to the British Isles: occasionally, however, it may straggle across to the northern parts of France, Holland, and Belgium; but we have not yet seen any specimen from there. It is distinguishable from the continental form by never assuming a white head, whereas both male and female of the latter, when fully adult, have the head white. Mr. Yarrell states that it is a common bird in the southern and western counties of England, from Sussex to Cornwall. Mr. Eyton includes it in his Catalogue of the Birds of Shropshire and North Wales; and Mr. Thompson says it is diffused in Ireland, through the wooded districts of the north particularly, but not in great numbers. It is found also in all the counties north of London, from Middlesex to Northumberland. Mr. Stevenson states that it is "found in Norfolk throughout the year, and even in the hardest winters finds subsistence upon minute seeds, or the insect atoms which, with ceaseless energy, it extracts from the crevices in the bark of trees;" and Mr. J. H. Gurney, jun., gives us the following notes respecting its distribution throughout England:—"The Long-tailed Tit may be termed a common resident, being marked as more or less abundant in every county that has a local list. It is common in Kent, Sussex, Devonshire, Somersetshire, Middlesex, Leicestershire, Shropshire, and Durham; and it is very common in Berkshire and Buckinghamshire. In some places it is rather less abundant, as in Cornwall, where it is stated to be rather local; and, like the Redstart and other common birds, it has been occasionally known to disappear from a district where it was formerly plentiful. Something of this kind is stated by Mr. Moore to have taken place at Woodbridge, in Suffolk (Zoologist, p. 2607); and they have certainly been 'conspicuous by their absence' at Northrepps and Keswick, in Norfolk." In Pembrokeshire, we are informed by Mr. Tracy that it is "common throughout the year" (Zoologist, p. 2641), and by Mr. Dix that it is "very abundant;" and we may infer that it is similarly distributed over the rest of Wales.

Regarding its range in Scotland, Mr. Gray writes that "this singularly restless little bird is tolerably common in many parts of the west of Scotland, but is more noticeable in winter, when flying in numbers alongside the bare hedgerows, than in summer, when it betakes itself to the woods. It is, perhaps, nowhere more common than in the neighbourhood of Loch Lomond, where I have seen, I may say, hundreds in the course of a day's walk. In the dead of winter they traverse the hawthorn hedges with amusing quickness, always keeping before the pedestrian, and bounding away in flitting groups, alighting every fifteen or twenty yards, and repeating their movements when approached. I remember, one breezy day in October, of seeing great numbers at Suss on the march in this way, and of being struck with their curious appearance on wing, apt as they were to have been mistaken for leaves blown off the twigs. Flights like these are occasionally seen in the outskirts of Glasgow. One or twice I have observed busy companies searching the trees near one of the streets, moving briskly from one tree to another as if they meant to examine hundreds before nightfall. On these occasions they are easily known by their call-note, which is plaintive, yet shrill and quite in keeping with the slender figure of the bird. It is found also on some of the inner islands, being rather common in Islay, as I have been informed by Mr. Elwes, and likewise in some parts of Skye." Mr. More records it as "less frequent in the north of Scotland, but described by Mr. Dunbar as nesting regularly in Ross, Sutherland, and Caithness. Sir William Jardine considers that it does not reach nearly so far north as the Coal Titmouse." Our friend Mr. J. A. Harvie Brown informs us that it is, so far as

his experience goes, "distributed generally over Scotland in suitable localities. In April 1867, I received a nest of this species from Dr. Brotherstone, of Alloa, built in a whinbush, as also the bird, which had become entangled amongst the materials of its nest and been strangled by a single horsehair."

During the summer season these birds are scattered about in pairs in the woodlands and groves, where they breed; but so soon as the young are fledged these latter accompany their parents in their autumnal wanderings; and small families of this lovely little Titmouse are often seen in company with other Titmice and Golden-crested Wrens. They are active and restless, move about from branch to branch, flitting with great celerity, and clinging to the twigs in every posture. When going from tree to tree they fly hurriedly with a succession of jerks, their long tail giving them rather a peculiar appearance. Its call-note is loud and shrill, resembling that of the Blue Titmouse; and when moving about in the tops of the high trees it calls incessantly. When one flies off from a tree-top, uttering its loud pleasant note, it is speedily followed by the rest of the party. Early in the spring they disperse, and each pair seeks for a suitable locality to attend to the serious business of nidification. The nest, which is a most artistic structure, is placed amongst the branches of a tree or shrub, or sometimes against the trunk of a large tree at the junction of a branch; it is of an oval form, composed of *Hypna* carefully woven together with the fine shreds of plants, covered with small pieces of grey lichens, and carefully lined with feathers. Macgillivray gives the number of feathers in one nest as 2379, no small number for these small birds to collect together to form a soft bed for their offspring.

Macgillivray gives a most excellent account of the construction of a nest of this bird, communicated to him by Mr. Weir, which we cannot do better than copy as follows:—

"'Boghead, 11th of May, 1839.—About seven o'clock on Saturday morning, the 20th of April, I had the pleasure of observing a pair of these active and interesting little birds, the Long-tailed Titmice, lay the foundation of their nest, in the cleft of an old ash tree, at the distance of about fifty yards from my garden. Before they commenced their operations, they flew in and out again and again, and examined the situation with the greatest attention. The underpart of their abode was constructed with mosses, and the sides with small portions of the white and grey tree-lichens, fine green mosses, some feathers, and a few leaves of the beech tree, beautifully intermixed and firmly interwoven with wool and the webs of spider's eggs. To give these materials the requisite solidity, they pressed them down with their breasts and the shoulders of their wings, and turned their bodies round upon them in all directions. When I first began to observe their motions, they seemed to be much displeased, and set up a strong clicking noise not unlike that of the Stonechat; but they soon became so tame that, although I placed myself at no great distance from them, my presence gave them but little annoyance. When the male was at work, the female usually remained upon a branch of the tree, about a foot from the nest, until he was done; she then completed her task. They then flew off together in search of materials, sometimes to a considerable distance, flitting through the air with the rapidity of an arrow.

"'On Thursday forenoon, between ten and eleven o'clock, the outside of the nest having been, after much labour, completed, they commenced lining it with a great variety of feathers,

some of which were of considerable size. With almost every kind of bird that came near their residence, even although some were three or four times larger than themselves, they fought most courageously, and did not desist from tormenting them until they drove them away. When engaged in contest, they uttered a harsh kind of chirp. It is asserted by Mr. Selby "that a small hole is left on two opposite sides of the nest, not only for ingress and egress, but also to prevent the bird, during incubation, from being incommoded by its long tail, which then projects through one of the orifices." If this be the form in which it is built in England, it is not so in this neighbourhood; for in all the nests which I have discovered, there was only one very small hole. When the female is sitting upon eggs, the male usually resides with her during the night. In this situation I have caught them after sunset, about the beginning of May. How they keep their tails from being injured is truly astonishing.

"'On Wednesday afternoon, the 1st of May, they finished their snug and comfortable dwelling, after having been for twelve days constantly and arduously engaged in its construction. All the sides and bottom of the interior were thickly lined with a great variety of feathers. Of all our British nests, this is the most elegantly and artfully constructed. On Thursday morning, the 2nd, the female laid her first egg. There are ten eggs in it to-day.'"

The eggs of this species are, excepting those of the Golden-crested Wren, the smallest of any to be found in this country. We have before us a series from Dresser's collection, which in size average $\frac{22}{40}$ by $\frac{17}{40}$ inch, and are white, spotted (chiefly at the larger end) with minute red dots. From eight to ten appears to be the usual complement.

It has been said that of later years this bird is becoming rarer; and our friend Mr. J. H. Gurney, jun., writes to us on this question as follows:—"Whether this species is really decreasing, as lately hinted in the 'Zoologist' (p. 2608), or not, I can answer for its being very scarce at Northrepps. In a year's time I have not seen a dozen, where I am assured they were formerly rather common; yet the increase of fir-planting has not been less here than elsewhere." In 'Land and Water' for May 1872 there are a number of letters on the moot point of the nest's having two holes; and the old opinion seems to be reestablished, that there really do exist two, but one of them is so small as to be easily overlooked. The theory of Selby that its purpose was for the accommodation of its long tail, which projected through, will not hold water for a minute; for, say Messrs. Sheppard and Whitear, "we have more than once this spring observed an old bird of this species sitting in its nest with its head partly out of the hole in the side of the nest, and its tail turned over its head, and projecting about an inch and a half."

The description and figures of the adult birds are taken from a pair shot by Captain Shelley at Avington, in Hampshire, on the 23rd and 24th of November, 1865, and given us by that gentleman.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, *b*, *c*, ♂, ♀. Avington, Hampshire, November 23rd and 24th, 1865 (*G. E. Shelley*). *d*, ♀. Near London (*C. Davy*). *e*, ♀. Near London, April 20th, 1870 (*C. Davy*). *f*. Aboyne, Aberdeenshire, September 23rd, 1871 (*R. B. Sharpe*).



LONG-TAILED TITMOUSE.
ACREDULA CAUDATA
103

ACREDULA CAUDATA.

(LONG-TAILED TITMOUSE.)

Parus caudatus, Linn. Syst. Nat. i. p. 342 (1766).
Acredula caudata, Koch, Syst. d. Baier. Zool. p. 199 (1816).
Paroides longicaudus, Brehm, Vög. Deutschl. p. 470 (1831).
Paroides caudatus, Brehm, Vög. Deutschl. p. 471 (1831).
Mecistura caudata, Brehm, Naumannia, 1855, p. 285.
Mecistura longicauda, id. tom. cit. p. 285.
Mecistura pinetorum, id. tom. cit. p. 285.
Orites caudatus, Sundev. Sv. Fogl. p. 92 (1856).

Mésange à longue queue, French; *la Cincia codona*, Italian; *Schwarzmeise*, *Pfannenstiel*, German; *Stjertmes*, Swedish; *Halemeise*, *Stjertmeise*, Danish; *Hantatütinen*, Finnish.

Figuræ notabiles.

Nozem. & Sepp, Nederl. Vog. i. tab. 26; Naum. Vög. Deutschl. iv. taf. 95. figs. 4, 5; Kjærb. Orn. Dan. afb. xxiii.; Schl. Vog. Nederl. i. pl. 130; Fritsch, Vög. Eur. t. 26. fig. 9; Sundev. Sv. Fogl. t. xv. figs. 4, 5.

♂ *ad.* pileo undique niveo: collo postico toto et uropygio nigris, hôc utrinque et scapularibus vinaceo-rufis, albido paullulum lavatis: dorso postico nigro, albo lavato: uropygio pallidè rosascente; supracaudalibus nigris: tectricibus alarum nigricantibus: remigibus nigricanti-brunneis, secundariis interioribus extùs albo limbatis, dorsalibus latiùs marginatis, ferè omninò albis, medialiter tantùm brunneis: caudâ nigrâ, rectricum exteriorum pogonio externo et pogonio interno versùs apicem albis, pennis quatuor centralibus omninò nigris: gutture toto niveo: corpore reliquo subtùs albicante, hypochondriis et subcaudalibus vinaceo lavatis: subalaribus niveis: rostro nigro: pedibus nigris: iride brunneâ, annulo ophthalmico flavicante.

♀ *ad.* mari similis.

Juv. suprà fuliginoso-niger, interscapulio laterali niveo plus minusve lavato: remigibus et rectricibus nigris, ut in adultis niveo limbatis: vertice niveo: pileo et collo lateralibus nigris usque ad interscapulium conjunctis: subtùs niveus, hypochondriis et subcaudalibus rosascentibus: rostro nigricanti-corneo, ad apicem et versùs rictum flavicante: pedibus flavicantibus, unguibus nigris.

Av. horn. similis adultis, sed pileo laterali plus minusve distinctè brunnescente lavato.

Adult Male. The whole of the head snowy white; hinder part of the neck and interscapulary region deep black, becoming slightly washed with white on the lower portion; sides of the back and scapulars deep vinous red, slightly washed with whitish on the lower portion; lower part of the back and rump pale rosy; upper tail-coverts black; wing-coverts blackish; quills blackish brown, the inner web white at the base, the inner secondaries externally margined with white, the dorsal ones more broadly so, the

innermost ones so broadly that almost the whole feather is white, except a mesial streak of brown; tail black, the four central feathers entirely so, the next with a small white spot near the tip of the outer web, the others bordered with white on the outer web, gradually inclining inwards, and occupying the tip of the inner web, so that these feathers appear very conspicuously tipped with white; under surface of the body whitish, with a faint vinous tinge on the flanks and under tail-coverts, deeper on the latter; under wing-coverts snow-white; bill black; feet black; iris brown; ring round the eye lemon-yellow. Total length 6 inches, culmen 0·3, wing 2·5, tail 3·5, tarsus 0·6.

Adult Female. Exactly similar to the adult male, and having the same pure white head.

Chick. Centre of the crown snowy white; sides of the crown itself and the sides of the head and neck generally dull sooty-black, joining behind on the interscapulary region, which again has a good deal of white on each side of it; the wings and the tail, as much as can be seen of the latter, coloured as in the adults, but the white borders purer; under surface of the body white, with a vinaceous tinge on the flanks and under tail-coverts, deeper on the latter; bill horn-black, the tips and basal portion near the gape yellow; feet yellow.

Obs. As a rule this is a very distinct species, the adults being always recognizable by their snow-white heads, and by having the innermost secondaries quite white, with only a narrow mesial line of brown. Both sexes are alike, when fully adult. Young birds are of course much harder to distinguish; but they are generally rather larger, have purer white on the head and breast, with longer wings and tail than the immature birds of the other European species.

Obs. The differences between the four European species of Long-tailed Titmice, *when fully adult*, may be briefly stated as follows:—

a. No distinct spot on the throat.
  a'. Head pure white . . . . . 1. *A. caudata.*
  b'. Head white in the centre, banded on each side with a broad line of black.
    b''. Back black in the centre . . . . . 2. *A. rosea.*
    c''. Back grey in the centre . . . . . 3. *A. irbii.*
b. Throat with a large greyish spot; back grey . . . . . 4. *A. tephronota.*

The changes of plumage of *Acredula irbii*, as well as its range, have still to be worked out; and it is difficult to tell some of the Piedmontese birds which Count Salvadori has sent us from genuine specimens of *A. rosea*. Whether this latter bird is the Long-tailed Titmouse of France we have not been able to determine, owing to the absence of a comprehensive work on the birds of that country, and the difficulty of procuring series of specimens. To the kindness of our friend Mr. Basil Brooke we owe the opportunity of examining a bird shot by him in the Pyrenees, which, although smaller, is scarcely separable from British examples. The black spots on the breast are very broad and distinct, as is the case with another bird, collected in Macedonia by Dr. Krüper. This one has also a slight appearance of a gular spot. As the distinctness of the European *Acredulæ* has only recently been mooted, some of the difficulties of their separation will be cleared away by future investigation. At present we believe that the following is the approximate range of each of the species, adult examples of all of which are in the national collection:—

1. *A. caudata.* *Hab.* Northern and Central Europe generally, extending in winter into Great Britain (where it has thrice occurred), Holland, probably France, and apparently Northern Italy; for Count Salvadori has sent us a specimen which is undoubtedly the true *A. caudata.*

2. *A. rosea.* *Hab.* British Islands, perhaps France.

3. *A. irbii.* Closely resembling *A. rosea*, but having a grey back when adult. *Hab.* Spain, Sicily, and

Italy. The only Grecian specimen we have seen differs considerably; and an examination of a series is necessary.

4. *A. tephronota*. *Hab.* Turkey, North-western Asia Minor, and Persia.

In Great Britain this species is excessively rare, and is replaced by a closely allied form (*Acredula rosea*), which never assumes the white head. Mr. J. H. Gurney, jun., writes that it has occurred in England only once for certain, viz. Mr. Hancock's specimen; but there is another in the Newcastle Museum, which may have been killed in Northumberland. Mr. Blyth, writing in the 'Magazine of Natural History,' speaks of one "in which the black markings on the head were nearly obsolete" (2nd series, vol. i. p. 203), but does not say in what part of England it was killed. Mr. Gatcombe also mentions (Zoologist, p. 2943) that when driving near Bridgwater, in October 1871, he saw a Bottle-Tit with a white head, which he supposed was this one. Its having been only recently admitted as a good species is no doubt the reason why it has not been noticed in this country oftener. Now that attention is drawn to it, it may be expected to turn up on the east coast not unfrequently, like the Black-breasted Dipper and other Scandinavian migrants. If the Golden-crested Wren can cross the German Ocean in such numbers, why should not the Bottle-Titmouse?

Throughout Scandinavia it is found; and its range extends far north. Messrs. Harvie Brown and Alston write to us that they observed it in Norway in 1871, always in the valleys, and nowhere very numerous; two specimens which they killed had the eyelids bright *lemon-yellow* instead of red, as in *Acredula rosea*. Mr. R. Collett writes that "it breeds commonly in most localities in the eastern parts of Norway, from Smaalehnene to above the polar circle, where, according to Sommerfelt, it is resident in the Saltdal, 67° N. lat. In the west it breeds sparingly in the interior, and is only seen on the coast in spring and autumn. On the fell-sides it goes as high as the upper part of the conifer region, where Schrader met with it at Aaseral; and it occurs on the Dovre. In 1868 a nest was sent to our University Museum from the Dovre. Professor Sundevall gives its range as up to 62° or 63° N. lat.; and Nilsson states that this species is everywhere rare in Sweden. It is found breeding in the non-evergreen woods of Skåne, but is nowhere common. According to C. Möller it breeds at Billinge; and according to Malmlén, near Gothenburg. In autumn and winter they rove about in small flocks, and are especially found in the alder swamps. In Finland, Mr. von Wright writes that "it occurs with us during migration, more especially in the autumn (October). A few certainly breed here, as I shot a family of young birds at Drumsö in July. We never observed them near Kuopio during the summer, but only in the autumn and early in the spring, about March." Mr. Sabanäeff refers to it as rare in the interior of Russia during the breeding-season, but as more numerous during migration, and sometimes wintering there. It breeds in the Government of Orloff; and Sabanäeff also found it in the Government of Perm. Severtzoff likewise met with it in the Voronege Government during migration. In Livonia and Esthonia it is, according to Meyer, common and sedentary; and throughout the whole of Northern Germany it is also a common bird, but is there a partial migrant. Our friend Mr. Benzon writes to us that it is not rare in Denmark, and is often seen in flocks out of the breeding-season and during the winter, when it approaches towns and inhabited places. It is common in Belgium throughout the year, and, as we are informed by Mr. Labouchere, equally so in Holland, being often observed near the towns in the winter

season. In France the Long-tailed Titmouse is common throughout the year; but probably the species found in Southern France, and perhaps even in Northern France, is *Acredula irbii* or *A. rosea*, and not this bird; for, so far as we can ascertain, *Acredula irbii* is the bird inhabiting Spain and the northern shores of the Mediterranean. In Switzerland, however, the true *Acredula caudata* is said to occur, and is common in the Basses-Alpes, and indeed throughout the whole of that country. We have also received a specimen, procured in Italy, from Count Salvadori. Throughout Austria it is, as we are kindly informed by Ritter von Tschusi Schmidthofen, to be met with in all mixed woods; and when in the autumn large flocks frequent the gardens, it is a common saying that there will be an abundance of snow. Lokoj observed in the Zavis valley, near Prague, a nest containing young which were being fed by three old birds, which he took to be a male and two females. Seidensacher writes that it is rare in the summer season in Styria, and commoner during the winter. Dresser, when collecting near Cilli with Seidensacher, procured the eggs of this species, and saw several pairs which were breeding there; he also met with it in Servia and Wallachia, all along the Danube; and Professor Nordmann says that it is seen everywhere in Southern Russia, in autumn and winter, in large flocks. It breeds in the mountains of Ghouriel and Adshara. Pallas writes that it ranges throughout Eastern Siberia; and it has been obtained there by the Siberian travellers. Dr. Radde states that the Siberian bird is a small race of the ordinary European species. He found them in flocks in the Bureja mountains from the 15th of August onwards; but after the middle of October they were not so numerous. They frequented the willows on the shores of the Angara; but as the cold became more intense they left these willow thickets and retired to the dense forests. Dr. Dybowski includes this species in his list of the birds of Dauria; and Dr. von Schrenck remarks that Siberian specimens have the head white. He observed this species both on the Upper and Lower Amoor, and states that it undoubtedly winters in the Amoor country. Von Middendorff procured it at Udskoj-Ostrog in January, and also remarks that the Siberian bird has a white head and is the same as our European species.

In its mode of nidification this species differs in no way from our common British bird; and Dresser has taken nests in Styria, which were precisely similar to nests he has taken in England. Regarding its habits and nidification in Switzerland, our friend Dr. Girtanner writes to us that it is "throughout the whole of Switzerland a tolerably common and well-known bird. During the summer it frequents the open woods and groves, and leads a somewhat quiet life; but towards the autumn and in the winter they collect in large flocks, and range through the gardens, moving from tree to tree, uttering, when on the wing, a continuous note *zi*, *zi*; and when on the trees, they hunt most industriously after the various insects on which they feed. Many come to us from the north to remain over the winter; but I do not think that those hatched here migrate away to any great distance." Dr. Girtanner sends us a sketch of a nest he took, which was placed against the trunk of a tree at a considerable altitude from the ground, and which, in shape, is cylindrical, cut off sharp at each end, and unlike those we have generally seen in this country, which have the ends rounded. He describes it as closely resembling a short stump of a branch cut square off, and as built about equally of fine moss and feathers, but so lightly constructed that it could scarcely be removed, except by very careful handling, although the walls of the nest measured 2 centimetres in thickness. The lower portion was inside con-

structed entirely of feathers, chiefly of Swallow's, some even 10 centimetres long; the bottom of the nest was much thicker than the side walls; and the entire nest measured outside 15 centimetres long by 10 centimetres in breadth. The young brood, as often as many as ten in number, are seen as early as April, and from then to the end of June.

This species inhabits not only the whole of the lower portions of Switzerland, but goes as high up into the mountains as 5000 feet above the sea-level, where Dr. Girtanner states he observed that its habits were exactly similar to the habits of those found in the valleys. He writes that in their restlessness, love of company, and also of strife, they assimilate closely to the true Titmice, but feed entirely on insect food. In confinement they are, he further writes, "very difficult to keep; but I have succeeded in keeping them in good health as long as two years. They thrive best when caught in the winter; and I have then confined them between large double windows where ivy was growing: on the leaves of this plant numbers of leaf-lice are found, on which the fresh-caught Titmice feed, and by degrees get accustomed to confinement, and take ants' eggs and other food. They are not free from cannibalism; and four which I had, killed their three companions by repeated strokes of the beak on the head, and devoured their brains. With this exception, they made very pretty and nice cage-birds."

Our friend Mr. Alfred Benzon, of Copenhagen, writes to us as follows:—"Here in Denmark it is called *Halemeise* and *Stjertmeise*. It is not uncommon, and is most numerous when, collected in flocks, it comes near to inhabited places. Its nest, however, is seldom found; and I only once met with one, containing ten eggs, at Dyrehaven on the 21st of May, 1870. This nest was somewhat loosely placed in the top of a white thorn, was almost round, composed of moss (*Hypnum*) outside intermixed with lichens, and inside lined with small feathers. Both birds incubated, but one not so assiduously as the other; if one approached close to the nest they flew off, but returned as soon as one retreated a short distance. In the summer of 1868 I saw a tolerably large family of young birds which remained some days about the thorn-bushes." Mr. Benzon kindly sent us a sketch (see woodcut, p. 6) of a most peculiarly shaped nest of this Titmouse, taken in Zealand. In shape it resembles a plain honey-jar placed horizontally on the upper part of a long cleft between two large branches, to the base of which a pouch twice or three times as long as the jar itself is attached perpendicularly, filling up the face of the fork between the branches; the entrance-hole is the mouth of the jar. This nest was built of moss, closely covered with pieces of lichen.

Mr. Benzon gives the measurement of Danish-taken eggs as 13 by 11 to 14·5 by 11·5 millimetres respectively, and describes them as similar in colour and markings to eggs from other parts of Europe. Eggs in Dresser's collection are dull white, with minute red dots collected chiefly at the larger end.

Dr. Rey has in his collection eggs from Northern and Central Europe, but none from the south. In Saxony the breeding-season is from the end of March to the early part of May, and the number of eggs from ten to fourteen; and thirty-three eggs which he has measured average in size 13·6 by 10·9 millimetres. The eggs are in some instances tolerably clearly marked, and in others they are almost without markings.

The figures and descriptions of the adult male and young are taken from beautiful speci-

mens procured near Stockholm by our friend by Mr. Meves; the female from a Swedish specimen procured from Herr Moeschler.



In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Sweden (*Moeschler*). *b*, ♂ *juv.* Sweden (*J. E. Harting*). *c*, ♂. Djurgården, Stockholm, January 24th, 1867 (*Prof. Sundevall*). *d, e, f, g, h*, ♂, ♀. Near Stockholm, December 31st, 1871, and March 3rd, 1872. *i, pull.* Wermland, June 2nd, 1870. *j, k.* Near Antwerp (*Kroger*).

E Mus. H. B. Tristram.

a, b. Denmark



1. IRBY'S LONG-TAILED TITMOUSE.
ACREDULA IRBII
2. TURKISH LONG-TAILED TITMOUSE.
ACREDULA TEPHRONOTA

ACREDULA IRBII.

(IRBY'S LONG-TAILED TITMOUSE.)

Acredula irbii, Sharpe and Dresser, P. Z. S. 1871, p. 312.
Parus caudatus, auctt. Hisp. et Ital. passim.
Acredula caudata, Salvadori, Faun. d'Ital. Ucc. p. 67 (1871).

♂ *ad.* fronte et vertice medio albis, cineraceo lavatis : capite laterali et collo postico sericeo-nigris : regione oculari et facie laterali albidis, regione paroticâ nigricante lineatâ : dorso toto pulchrè cinereo, scapularibus vinaceis, albido terminatis : uropygio vix vinascente tincto : supracaudalibus nigris obsoletè cinereo apicatis : tectricibus alarum nigris, majoribus intimis cano lavatis : remigibus nigris, secundariis interioribus extùs albido limbatis, intimis latiùs : caudâ nigricante, rectricibus exterioribus quatuor extùs gradatim apicem versùs albis : subtùs albidus, pectore maculis brunneis paucis notato : hypochondriis, abdomine imo et subcaudalibus rosaceis, his saturatioribus : subalaribus niveis : rostro nigro : pedibus nigris : iride pallidè brunnescenti-rubrâ : annulo ophthalmico aurantiaco.

♂ *ad.* Crown of the head whitish from the forehead to the nape, marked with brownish spots; sides of the crown black, extending backwards on to the hinder neck, which is glossy black; the forehead is whitish, and the black on the sides of the head is so broad that the mesial white streak on the crown seems very narrow; a ring round the eye, cheeks, and ear-coverts white, the latter streaked with greyish brown; entire back, beginning from the interscapulary region, clear bluish grey, the scapulars on each side of the interscapulary region pale vinous; a very faint tinge of rosy mixed with the grey of the rump; upper tail-coverts blackish, with obsolete greyish tips; upper wing-coverts blackish, the innermost greater coverts slightly washed with ashy white; quills blackish, the inner secondaries externally bordered with white, the dorsal ones paler, but not whitish; tail brownish black, the four inner rectrices entirely so, the next with a very narrow white border, and the three outermost white on the outer web, and becoming gradually more marked with white on the inner web towards the external feathers; underparts of the body whitish, the breast with a few small spots of ashy brown, the flanks and under tail-coverts washed with a delicate rose-colour; under wing-coverts snow-white; bill black; feet blackish; iris brownish red; eye-ring orange.

Obs. The young birds appear to be so similar to those of *A. rosea* that no description is necessary.

As we stated in writing the history of *Acredula caudata*, so little is known respecting the geographical range of the three species of Long-tailed Titmice, that we are as yet quite unable to fix the limits of their range with any degree of certainty. This species is certainly the one inhabiting Spain, and is likewise found in Italy; but we cannot state whether it is met with throughout France, owing to our not having been able to procure a series of specimens from that country. MM. Degland and Gerbe expressly state that the Long-tailed Titmouse of France does not assume a white head, and that it differs from the northern species; but whether the bird inhabiting that country should be referred to *Acredula irbii* or to *A. rosea* remains yet to be ascertained. In Spain this species is not common. Lord Lilford did not himself ever observe it in that country; but a nest was brought to him by his collector (Severin), who looked on it as

a very great curiosity, never before having seen the bird or nest. Mr. Howard Saunders observed this Titmouse at Aranjuez in May, where Dresser also saw it in the same month; and Mr. Saunders further states that it is found in Andalucia in winter. Major Irby writes to us that it is "resident near Gibraltar, but very local. I never met with any, except in the cork-wood of Almo-raima, where it is common, and generally seen on the ash trees which grow in the sotos or swamps. In the warm months they seem never to quit these wet places; I have several times found the old nest built in the sarsaparilla creepers, which form regular net-work walls from the branches of the trees to the earth. The nest is usually about ten feet from the ground, and exactly resembles that of our British Long-tailed Titmouse. They build very early; I have killed young birds able to fly well on the 14th of April, which would make the time they begin to lay about the 20th of February. The eyelids in the adult bird are edged with brick-red." In Portugal a Long-tailed Titmouse is found, of which we have not been able to examine a specimen, but which we think will prove to be this species. Dr. E. Rey writes to us that there are two specimens in the Lisbon Museum; he himself found it rare in Portugal, but observed a flock of about thirty individuals in an azalea thicket at Algabien on the 5th of May, 1869. The Rev. A. C. Smith also includes it in his list of the birds of Portugal. In Italy and Sicily it is tolerably numerous; and according to Dr. H. Giglioli common in the neighbourhood of Pisa. Some of the specimens sent to us by Count Salvadori come, however, very close to our British species. The species found in Greece, judging from the one example we have had an opportunity of examining, differs considerably from *Acredula irbii*, and we cannot refer it to that species until we have examined a large series. Messrs. Elwes and Buckley shot examples both in Macedonia and Bulgaria, which they considered to agree exactly with British specimens, not having the white head of the German and Scandinavian form. It must, however, be borne in mind that, when these gentlemen wrote the above, *Acredula irbii* had not been described. The Grecian bird, according to Lindermayer, comes down from the mountains in the north of Greece to the plains of Athens during severe winters. It breeds in the forests of Rumelia and Arkarnania, where Dr. Krüper has procured the eggs. Lord Lilford also found a Long-tailed Titmouse common during the winter season in Epirus. In its habits, note, and mode of nidification this species does not differ in any way from our British Long-tailed Titmouse; and we therefore do not give our readers more concise details on these heads, but merely refer to what we have written in treating of *Acredula rosea* and *Acredula caudata*. Much has yet to be ascertained respecting this bird; and we trust that ere long the South-European naturalists will collect sufficient data to enable them to throw more light on the habits and range of the present species.

The specimen described and figured is in Dresser's collection, and was obtained by Major Irby near Gibraltar in March 1871.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Gibraltar, March 12th, 1871. *b, c.* Gibraltar, February 1871. *d, e.* Gibraltar, May 2nd, 1871 (*L. H. A.*). *f, g*, ♂, *h, i, j*, ♀, *k, l, m, n, juv.* Piedmont, May (*Salvadori*).

ACREDULA TEPHRONOTA.

(TURKISH LONG-TAILED TITMOUSE.)

Orites tephronotus, Günther, Ibis, 1865, p. 95.
Acredula tephronota, Sharpe, Ibis, 1868, p. 302.
Parus tephronotus, Gray, Hand-l. of B. i. p. 234 (1869).

Figura unica.

Günther, Ibis, 1865, pl. 4.

♂ *ad.* pileo cinerascenti-albido, utrinque strigâ latâ nitidè nigrâ marginato: dorso toto pallidè cinereo, uropygio dilutè rosaceo: tectricibus alarum nigris, majoribus angustè albo marginatis et terminatis: remigibus nigricantibus extùs cineraceo, secundariis latiùs albido limbatis: rectricibus nigris, externis quatuor apicem versùs gradatim albis: mento, loris et genis anticis albidis, supercilio et regione paroticâ cinerascentibus: colli lateribus albidis, distinctè nigro lineatis: gulâ imâ sordidè cinereâ, maculam exhibente: gutture fulvescente, vix brunneo lineato: corpore reliquo subtùs fulvescenti-albo, hypochondriis et subcaudalibus rosaceis: subalaribus albis: rostro nigro: pedibus nigris: iride pallide brunnescenti-rubrâ: annulo ophthalmico aurantiaco.

♀ haud a mari distinguenda.

Adult Male. Crown of the head white, considerably washed with ashy, especially on the forehead; sides of the crown glossy black, extending from above the fore part of the eye to the nape, and forming a broad border on each side of the white crown; entire back clear bluish grey, somewhat varied with white on the interscapulary region; rump tinged with clear rose-colour; upper wing-coverts black, the least ones washed with grey, the inner, greater, and median coverts brownish, with narrow pale margins; quills ashy brown, with a narrow outer margin of greyish, broader on the secondaries, the dorsal ones having the inner web paler ashy-brown; upper tail-coverts greyish; tail-feathers black, the central feathers externally bordered with greyish, especially near the base, the third feather on each side whitish on the tip of the outer web, the three outermost white on the outer web, and having the tip of the inner web also white, gradually increasing in extent towards the outermost rectrix, which is almost entirely white; sides of the face ashy white, the ear-coverts streaked with brownish; sides of the neck greyish, distinctly striped with black; chin white, the lower throat dark greyish, almost black, forming a conspicuous spot; breast whitish, with a few indistinct stripes of greyish brown; rest of the under surface of the body whitish down the centre, the flanks, vent, and under tail-coverts pale rose-colour; bill black; feet black; iris of a light brownish-red colour, with an outer bluish-white ring; eye-ring orange. Total length 4·8 inches, culmen 0·3, wing 1·35, tail 2·8, tarsus 0·17.

Adult Female. Exactly similar to the male.

Winter plumage. Not quite so bright as in summer, the back somewhat paler grey, and the throat-spot not quite so distinct, owing to its being obscured to a slight extent by ashy margins to the feathers.

To Mr. Robson, of Constantinople, belongs the credit of having first called attention to the fact

that a new species of Long-tailed Titmouse, very distinct from the other allied European species, existed in the neighbourhood of Constantinople. This Turkish Long-tailed Titmouse, easily recognizable by its black throat, was first figured and described by Dr. A. Günther in 1865 (Ibis, 1865, p. 95), from specimens sent home by Mr. Robson. Hitherto the range of this species was considered to be very restricted, the only specimens which have as yet been obtained having all been procured by Mr. Robson in the neighbourhood of Constantinople or in Asia Minor; but Mr. W. T. Blanford has recently discovered it in Persia, and was kind enough to show us his specimens, which differed in no way from Mr. Robson's Turkish examples. As may also be supposed, very little has been recorded respecting its habits, which, as we are informed by Mr. Robson, differ in no way from those of the common European Long-tailed Titmouse. Messrs. Elwes and Buckley obtained the nest and eggs of this Titmouse from him, and, on their return to England, carefully compared them with those of our British species, and could distinguish no difference whatever. We give the following notes published by these gentlemen in their paper on the birds of Turkey (Ibis, 1870, p. 199):—"We never saw this species, though we searched for it twice in the valley of Buyukdere, which Mr. Robson informs us is one of its favourite haunts. It does not seem to come far to the west of the Bosphorus, though it is common on both sides of that strait. Mr. Robson is the only person we know of who has seen the Turkish Bottle-Titmouse in a state of nature; and he describes its habits as being exactly similar to those of the common species. The nest and egg, which he was kind enough to present us with, are also similar. It breeds early in March and April, and is very fond of a yew tree for its nest. On comparing this species with the common Bottle-Titmouse, the tail is much shorter, and the tints are generally much darker, the black mark on the throat being always a good distinction, as, indeed, is made apparent by Dr. Günther's original description and Mr. Wolf's figures."

The description and figure of the adult male are taken from a specimen in Dresser's collection, sent by Mr. Thomas Robson, who shot it at Bagchakeuy, in Turkey, on the 2nd of March, 1869.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, ♂, ♀. Asia Minor, April 8th and 23rd, 1868 (*T. Robson*). *c*, ♂. Bagchakeuy, Turkey, March 2nd, 1869 (*T. R.*). *d*, ♂. Guiken, Asia Minor, May 11th, 1869 (*T. R.*). *e*. Near Constantinople, October 26th, 1870 (*T. R.*). *f, g*, ♂, ♀. Guiken, Asia Minor, November 26th, 1870 (*T. R.*). *h*, ♂. Guiken valley, Asia Minor, September 17th, 1871 (*T. R.*).

E Mus. H. B. Tristram.

a. Guiken (*T. Robson*). *b*. Belgrade (*T. R.*). *c*. Ortakeuy (*T. R.*).

E Mus. Ind. Calc.

a, b, c, d. Resht, south of the Caspian Sea (*W. T. Blanford*).

Genus PARUS.

Parus, Linnæus, Syst. Nat. i. p. 341 (1766).
Pœcile apud Kaup, Natürl. Syst. p. 114 (1829).
Cyanistes apud Kaup, op. cit. p. 99.
Penthestes apud Reichenbach, Av. Syst. Nat. pl. lxii. (1850).
Poikilis apud Blasius, List of B. of Eur. p. 8 (1862).

The Titmice form a very distinct group, inhabiting the Palæarctic, Oriental, the northern portion of the Ethiopian, the Nearctic, and the northern portion of the Neotropical Regions. Twelve species are found in the Western Palæarctic Region, all of which are residents or partial migrants. They inhabit woods, groves, and well-wooded cultivated places, are extremely active and lively in their movements, searching for their food amongst the foliage, clinging to the twigs often with the head downward. They feed chiefly on insects, but also on seeds, and on suet and fatty substances thrown out from houses. Their flight is rapid and undulating; and they have a very poor song, but utter a loud call-note. They place their nests in holes, and make a bulky structure of mosses, grass, &c., lined with feathers, and lay numerous whitish eggs spotted with brownish or red dots and small blotches.

Parus major, the type of the genus, has the bill stout, rather short, straight, somewhat conical, the upper mandible slightly curved towards the tip; nostrils basal, small, round, concealed by reversed bristly feathers; gape with a few short weak bristles; wings short, concave, rounded, first quill short, the second about equal to the ninth; tail rather long, narrow, very slightly emarginate; tarsus moderate, covered in front with four plates and three inferior scutellæ; feet strong, claws long, strong, and curved, laterally grooved, and tapering to an acute point; plumage soft, lax, and blended.

The present genus has been subdivided, but, as it appears to me, without valid reason—the Blue Titmice having been separated under the generic title *Cyanistes*, and the Marsh-Titmice under the title of *Pœcile*; but, after a careful examination of the various species, I have decided to include both these groups in the present genus.



PARUS MAJOR.

XIV

PARUS MAJOR.

(GREAT TITMOUSE.)

Parus major, Linn. Syst. Nat. i. p. 341 (1766).
Parus robustus, Brehm, Vög. Deutschl. p. 461 (1831).
Parus fringillago, Pallas, Zoogr. Rosso-Asiat. i. p. 555 (1831).

Mésange charbonnier, French; *Kohl-Meise*, German; *Talgmes*, Swedish; *Kjödmeise*, Norwegian; *Musvil-meise*, Danish; *Cinciallegra*, Italian; *Carbonero*, *Quive-vive*, Spanish.

Mas pileo, colli lateribus, et gutture toto indigotico-nigris: genis cum regione auriculari nuchaque albis, hac posterius flavicante usque ad dorsum flavicanti-viridem: tectricibus alarum pulchre cinereis, majoribus albo terminatis: remigibus nigricantibus, extus cinereo versus apicem albido, secundariis flavo marginatis: dorso postico cinereo: cauda cinerea, rectrice penultima albo ad apicem pogonii externi terminata, ultima late albo marginata: subtus citrinus, corpore medio nigro: subcaudalibus albis, nigro variis: subalaribus albis: rostro nigro: pedibus plumbescenti-cinereis.

Fem. mari similis, sed coloribus sordidioribus, et linea nigra pectorali angustiore.

Juv. similis adultis, sed coloribus multo dilutioribus et genis flavicante tinctis.

Male. Crown of the head, sides of the neck, and entire throat glossy black, with a deep indigo lustre; cheeks, ear-coverts, and a small spot on the upper nape white; back of the neck citron, gradually shading off on to the back, which is yellowish green; wing-coverts clear blue-grey, the greater ones tipped with white, the outermost one of the row edged with white; quills blackish, externally margined with slaty grey, which shades off into a white edging towards the tip of the feather; the secondaries externally edged with yellowish, becoming white toward the tip; lower part of the back, rump, and upper tail-coverts slaty grey, becoming darker on the latter; tail blackish, broadly washed with blue-grey, so as to appear almost entirely of this colour, the last feather broadly edged with white, and the last but one just tipped with white on the outer web; under surface of the body citron-yellow, with a broad line of black down the centre of the breast extending to the tail-coverts, which are also varied with white; under wing-coverts white; bill black; iris black; feet leaden-grey. Total length 5·8 inches, culmen 0·45, wing 2·95, tail 2·45, tarsus 0·7.

Female. Similar to the male, but has the glossy blue lustre on the throat not so bright, and the median pectoral stripe much narrower.

Young. Similar to the adults, but has all the colours very much duller, and a dash of yellow on the cheeks.

The Great Titmouse appears to extend over the whole of the Palæarctic Region, being everywhere for the most part resident, but in some localities migratory. In Great Britain it is a very common bird; but, as Mr. A. G. More observes, it is "rare in the north of Scotland, but marked by Mr. Dunbar as breeding regularly in Ross and Sutherland. Sir W. Jardine describes it as ranging scarcely so far north as the Blue Titmouse." In Ireland Thompson says it is common

and resident. In Scandinavia it is also generally distributed, being found up to the north of Trondjem, according to Nilsson, who also states that it has been seen at Jockmock, in Lapland It is a common bird in Norway, Sweden, Finland, and Denmark. Meyer records the present species as common, and migratory in Livonia; and it is also a migrant in North Germany according to Borggreve. Naumann states that it is found all over Germany, being chiefly migratory; but in some parts the birds are resident, or only change their habitats to some extent. He says that "they migrate during the daytime, generally in the forenoon, from eight to twelve, or even one o'clock, or, when they feel that bad weather is approaching, to three o'clock. The chief portion have passed by the middle of October, after which only stragglers are seen." Throughout France it is sedentary, as also in the Rhenish Provinces. In Italy and Sardinia it is also a resident, and, according to Von Homeyer, is common on the Balearic Isles. In Spain Major Irby informs us that it is the most common of all the Titmice, and is there called "*Carpintero*" and "*Quive-vive*;" in Portugal it is also found. Dr. C. Bolle states that in the Canary Islands it is found on Teneriffe and Palma; and Mr. C. A. Wright has recorded a single instance of its occurrence in Malta. In Algeria it is a resident bird, and occurs in most of the countries along the Mediterranean basin, though as yet it has not been met with in Egypt; we should, however, not be surprised to hear that it had been seen on the Delta, though only as an occasional visitant. Lord Lilford says that it is occasionally seen in winter in Corfu and Epirus. In Greece Von der Mühle observes that it comes with its congeners in winter into Roumelia, where it also breeds. Lindermayer, more fully, states that it is much "commoner in that country than other species of Titmice, and not only breeds on the higher mountain-ranges, but even in the olive-woods on the plains. Although it is not found on the islands, it must be considered a resident." As regards its occurrence in Palestine, Dr. Tristram has published (Ibis, 1866, p. 285) the following note:—

"Of the Titmice only one, *Parus major*, L., is common in Palestine; it is found in all the woods and oliveyards east and west, but never in the Jordan valley; and its coloration is very bright. It is rather an early breeder; but we found one nest ready to hatch in an olive-tree near Jerusalem on April 26th."

Mr. T. Robson, of Ortakeuy, near Constantinople, writes us that "this bird is abundant in Turkey in Europe and Asia Minor, where it is widely distributed. It is a lively, active bird, frequenting gardens and seeking its food, which consists of insects, amongst trees, bushes, old tree-roots, &c. It is also abundant in woods where there are old trees, which it appears to prefer to low brushwood, and is partial to alder trees. On the bare mountain-sides it is rarely seen, except where a few isolated decayed trees remain standing, on the trunks and amongst the branches of which these restless birds find food and shelter. In gardens and shrubberies in towns they are also often to be met with and nest there, building in holes in trees or walls, generally the latter or behind detached pieces of wood in the sides of the houses. In the winter they congregate, and in small companies traverse daily wide districts in search of food. They are constant residents in Turkey."

The Great Titmouse has been sent from Trebizond by Mr. Keith Abbott; and Radde and Von Nordmann say that it is common in South Russia. It likewise appears to extend throughout Siberia. Radde found that specimens collected there agreed with those from

Eastern Europe. It was not everywhere common in Eastern Siberia, but rather more frequently met with in the woods of the Baikal mountains, though much rarer in Transbaikal and the Amoor. Middendorff procured the present species at Udskoi Ostrog in December and January. In size his specimens were about equal to middling-sized European birds; the belly was hardly yellowish, but rather dirty yellowish-green in colour.

With us in England the Great Titmouse is a resident, frequenting during the summer season woods and large gardens where its food, which at that season of the year consists almost exclusively of insects, is best to be found. They are excellent destroyers of the latter, and for that reason are welcomed in any gardens where the owners are sufficiently enlightened to know and esteem their value. During the winter season they flock together in families, and either roam about wherever there are trees, in company with Creepers, Titmice, and other small birds, diligently seeking after insects and their eggs in the bark of trees, or else remain in the neighbourhood of inhabited places picking up what refuse they can find. They are remarkably fond of picking a bone, and may often be seen near the kitchen-door watching for any stray scraps that may be thrown out. Some friends of ours who are fond of enticing the Titmice to remain about their gardens, feed them during the winter by hanging lumps of suet in a small net on a piece of wire fixed across the top of a high stick, in order that they may be out of reach of the cats; and I have often been astonished to see how soon a large piece of suet is demolished by these little birds. Often two or three may be seen clinging on to the same piece, pecking at it vigorously, evidently enjoying the good fare prepared for them. Lively and restless, the Great Titmouse is always to be seen on the move, and, to use the expression made use of by the old Bushman with regard to the Laps, "life appears with them to be one perpetual struggle for 'grub.'" When hunting after insects, &c., in trees, they appear to examine every part most carefully, moving along and round the branches, now clinging head downwards, now moving along the limbs of the tree almost like a Creeper, or clinging to the end of a small branch, examining carefully a bud to see if any insect is harboured therein. This is done in a most businesslike, quiet manner, and only now and then a low call, *zee*, is uttered; but when taking a short flight from tree to tree or bush to bush, they utter their cheerful loud note.

Not only do they devour insects and seeds, but will attack and kill small and weakly birds, or even sickly or wounded individuals of their own species, annihilating them by repeated blows on the head with their powerful bill; and having done this, they immediately proceed to open the skull and devour the brain, which has a peculiar charm for them. When in confinement, they frequently attack and kill other small birds which are placed in the same cage.

We copy the following curious anecdote respecting this habit of the Great Titmouse, communicated to the 'Zoologist' by the Rev. E. Charles Moor, of Woodbridge, Suffolk:—

"Early in the morning of the 13th November, 1870, I noticed a Greater Titmouse (*Parus major*) fly down from the housetop with a living Bat in his beak, and to our astonishment he set to work pecking at it, evidently for the purpose of killing it, which eventually he did, the Bat making only a weak resistance by gently flapping its wings. The bird then flew away with its prey to a rose-tree, some ten yards off. Revisiting the spot in two hours' time we found that its little beak had penetrated the Bat's skull and cleared its brains out."

The following observations are from the pen of the late Captain Loche:—

"This bird is common and sedentary in Algeria, and frequents the woods during the chief part of the year, but in the winter is found in the gardens. Its manner is bold and lively. Its food consists chiefly of insects and larvæ; but it also feeds on seeds; and when it can seize small birds, it fractures the skull by repeated blows of its beak and devours the brain. When it feeds on seeds, &c., it does not break them like other birds, but places them in cracks and pierces them with blows of the bill. Very fond of insects, it runs round the branches, everywhere seeking in the fissures of the bark and destroying eggs of the insect, thus doing true service to the agriculturist. . . . It appears in the month of March.

"The incubation extends over twelve or thirteen days; and the young are fed by both parents with the greatest assiduity, and can be seen returning often to the nest with caterpillars in their bills. If other birds attack their progeny, the parents defend them with intrepidity and boldly drive off the foe. The young quit the nest in from fifteen to twenty days after they are hatched, but remain for long in the neighbourhood of their home, and utter a shrill and continuous cry, which seems to be a call-note to each other; and they remain thus together until the spring."

Herr W. Pässler has published the following interesting note, which we transcribe herewith:—

"On the 27th of June I watched the Great Titmouse in my garden. I lay under a plum-tree, below a hole in which this bird makes yearly its first nest; this year, however, it was the second brood. Although the nest-hole was scarcely a foot above my head, the careful parents flew in and out and fed their young. After a time I observed that two males were bringing food, whilst the female covered the young. One male was much busier than the other; and I recognized it by a loose feather on the wing. If it returned whilst the other male sat on the tree, it greeted the latter with friendly fluttering and tender twittering, and appeared to be pleased to find it keeping watch. If it was in the nest-hole with the sitting female, and the other male came with food to the entrance, the latter flew off as if frightened. Now and then the female would leave the hole for a short time to get fresh air or seek after food. As I did not observe any fourth bird, I concluded that the one female had either two mates or a mate and a friend."

The nest of the Great Titmouse is invariably placed in a hole either of a tree or a wall, wherever they consider it most suitable. We have found a nest in an old garden-pump, the entrance having been effected through the spout. The nest is composed of a foundation of dried grass or moss, above which is a soft bed of hair, wool, or feathers. The eggs of this bird measure about $\frac{14}{20}$ by $\frac{10}{20}$ inch, and are pure white, sparsely covered with light purplish red underlying shell-markings and bright red surface-blotches.

Mr. Stevenson, in his 'Birds of Norfolk,' has given some very interesting details respecting the breeding of the Great Titmouse. He mentions having found the eggs placed on rotten wood, not in the nest itself. He further gives an account of a nest, the particulars of which we transcribe in his own words:—

"The most extraordinary nest of this species that I ever saw or read of was discovered in a plantation at Earlham, in the summer of 1859. This natural curiosity, which is carefully preserved in the collection of Mr. John Gurney, of Earlham Hall, was discovered in a rough corner-cupboard, fixed at one end of an old shepherd's house, erected in a plantation for the use of the gamekeeper. In the centre of the cupboard was a single shelf; and the door being kept shut, the

pair of Titmice could only obtain access through a small hole in the woodwork above. Through this opening, however, the enormous amount of materials found must have been introduced bit by bit, until the entire space between the shelf and the top of the cupboard, leaving only just room enough for the hen bird to sit, was filled with a compact mass of twigs, moss, bents, feathers, rabbits' down, horsehair, wool, and even flowering grasses. Moss formed, of course, the chief substance employed; yet so wonderfully had the whole fabric been woven together that, when taken from the shelf upon which it was erected, it retained the exact shape of the three-cornered cupboard, the sides being as firm and neat as a well kept grass edging levelled with a roller. The following dimensions of this remarkable structure will best give an idea of the skill and labour thus strangely devoted to it by its untiring architects. Length in front 15 inches, height 9 inches, depth from front to back, measured to the angle of the cupboard, 10 inches. In the centre of the upper part was a depression, in which the eggs were laid; and here, in spite of frequent intrusions from curious visitors, the hen bird being even handled on her nest, these little creatures reared five young ones and carried them off in safety. A similar nest, commenced in the previous spring, was unfortunately destroyed; but since the successful completion of the one above mentioned no further attempt has been made to repeat so formidable a task."

The description and measurements, as well as the figures in the accompanying Plate, are taken from specimens in our collection, killed by Heer Sala, in the neighbourhood of Leyden, in October 1870.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, b, c. Near London (*R. B. S.*). *d.* ♂. Cookham, Feb. 15th, 1870 (*J. Ford*). *e, f, g, h, i, j, k.* Near Leyden, Holland (*Sala*). *l, m, n.* Piedmont (*Salvadori*). *o.* Sardinia (*Salvadori*). *p.* Gibraltar (*Irby*). *q.* ♂. Macedon, Nov. 5th, 1869 (*Krüper*). *r.* Crimea (*Whitely*).

E Mus. Lord Lilford.

a, b. Lilford, Oundle (*Lilford*).

E Mus. H. B. Tristram.

a. Durham (*H. B. T.*). *b, c, d.* Palestine (*H. B. T.*).

E Mus. Howard Saunders.

a, b. Seville, Dec. 1869 (*H. S.*).



1. ALGERIAN COAL-TITMOUSE.
PARUS LEDOUCI
2. ENGLISH COAL-TITMOUSE.
PARUS BRITTANICUS
3. EUROPEAN COAL-TITMOUSE.
PARUS ATER

PARUS LEDOUCI.

(ALGERIAN COAL TITMOUSE.)

Parus ledouci, Malh. Mém. Soc. Hist. Nat. Moselle, 1842, p. 45.

Bou reziza of the Arabs (*Loche*).

Figura notabilis.

Gurney, Ibis, 1871, pl. iii.

Ad. pileo summo et collo postico laterali nitidè purpureo-nigris: plagâ nuchali magnâ pallidè citrinâ: genis cum regione paroticâ et colli lateribus lætè citrinis: dorso toto viridescenti-cinereo, uropygio paullò flavidiore: tectricibus alarum minimis, dorso concoloribus, medianis et majoribus extùs sordidè cinereo limbatis et albido terminatis, fasciam duplicem alarem formantibus: remigibus et rectricibus cinerascenti-brunneis, extùs dorsi colore limbatis: secundariis intimis vix albido terminatis: gutture toto nigerrimo: corpore reliquo subtùs lætè citrino, hypochondriis magis olivascentibus: subalaribus albidis, citrino lavatis: rostro nigro: pedibus plumbeis: iride saturatè brunneâ.

Adult. Crown of the head, extending backwards as far as the interscapulary region, glossy purplish black; a large nuchal patch yellowish white; cheeks, ear-coverts, and sides of the neck bright lemon-yellow; entire back greenish grey with a slight dash of olive, very little brighter on the rump; wing-coverts blackish, the least ones washed with greenish grey like the back, the median and greater coverts externally bordered with dull grey, and tipped with whitish, forming a double alar bar; quills and tail-feathers ashy brown, externally margined with greenish grey like the back, the innermost secondaries almost imperceptibly tipped with white; entire throat deep black, the rest of the under surface of the body bright lemon-yellow, the flanks inclining to greenish; under wing-coverts whitish, washed with lemon-yellow; bill black; feet leaden-grey; iris dark brown. Total length 4·3 inches, culmen 0·4, wing 2·5, tail 2·0, tarsus 0·75.

This Titmouse is the Algerian representative of *P. ater*, to the young of which it bears some resemblance.

It was first described by Malherbe from a female specimen obtained near Bône by M. Ledoux, after whom it is named. Mr. L. Taczanowski informs us that in Algeria he found this species less common than *P. ultramarinus*, and only met with it in the pine-forests (*Pinus maritima*) near Batna, in the mountains of Bonarif and Aurès. Its habits are precisely similar to those of *Parus ater*. It is found in flocks with Creepers and Goldencrests, and climbs about the branches uttering a similar note to *Parus ater*, in a low tone. Mr. J. H. Gurney, jun., says, "I only obtained this species at Miliana, where I observed two pairs on the low trees upon the sides of the mountains. I did not then distinguish them from the Coal Tit (*Parus ater*), with which their habits and actions appeared to agree. The specimen in the Algiers Museum was killed at Beni Slimam."

Loche says that the habits of this Titmouse coincide with those of the Coal Titmouse. It

feeds on caterpillars, larvæ, woodlice, insects, berries, and seeds of conifers; it climbs about the branches and suspends itself in all possible positions with the greatest ease. It inhabits the large woods, and rarely visits the gardens, is not wild, and may be easily approached. Its note in the breeding-season is soft and agreeable; and besides this it has a short and shrill call-note like *tzi-tzi*. We found this Titmouse in all the wooded parts of Algeria."

Mr. Benzon, of Copenhagen, informs us that he has an egg of this bird from Loche, which measures 17 by 12·5 millimetres. It is white, covered with small rust-red spots which collect at the larger end, and in character is intermediate between eggs of *Parus ater* and *Parus cæruleus*.

The following specimen is the only one we have examined of this rare little bird. It was procured by Mr. Gurney during his trip to Algeria, and has already formed the original of a plate in 'The Ibis.'

E Mus. J. H. Gurney, jun.

a. Miliana, Algeria, February 21st, 1870 (*J. H. G.*).

PARUS ATER.

(EUROPEAN COAL TITMOUSE.)

Parus ater, Linn. Syst. Nat. i. p. 341 (1766).
Parus carbonarius, Pall. Zoogr. Rosso-Asiat. i. p. 556 (1811).
Pœcile ater, Kaup, Natürl. Syst. p. 114 (1829).
Parus abietum, Brehm, Vög. Deutschl. p. 466 (1831).
Parus pinetorum, Brehm, Naumannia, 1855, p. 285.

Mésange noire, French; *Cincia romagnuola*, *Cincia nera*, Italian; *Kohlmeise*, German; *zwarte Mees*, Dutch; *Svartmes*, Swedish; *Kulmeise*, Norwegian; *Sortmeise*, Danish; *Mustatiitinen*, Finnish; *Sinitza czernaia-Moskowa*, Russian; *Sosnowka*, Polish.

Figuræ notabiles.

Werner, Atlas, *Granivores*, pl. 9; Naum. Vög. Deutschl. iv. Taf. 94; Kjærb. Orn. Dan. Taf. xxiv. fig. 1; Schl. Vog. Nederl. pl. 127; Sundev. Sv. Fogl. pl. xvi. fig. 4; Bettoni, Ucc. Lomb. tav. 91.

♂ *æstiv.* pileo summo nitente nigro: plagâ nuchali albâ magnâ ad interscapulium dilatatâ, utrinque pilei nigredine latè marginatâ et vix inclusâ: genis totis, cum regione paroticâ et colli lateribus, albis: dorso et scapularibus pulchrè cinereis, uropygio fulvescenti-olivaceo: tectricibus alarum minimis pulchrè cinereis, reliquis nigris, extùs cinereo limbatis et conspicuè albo terminatis, fasciam duplicem alarem formantibus: remigibus nigricantibus, extùs argenteo-cinereo limbatis, secundariis albo terminatis: rectricibus nigricanti-cinereis, extùs cinereo marginatis, vix albo apicatis: gutture toto nigerrimo: pectore medio albicante: corporis lateribus vinaceo-fulvis: rostro nigro: pedibus plumbeis: iride brunneâ.

♂ *hiem.* similis ptilosi æstivæ, dorso minimè olivaceo lavato: hypochondriis sordidè fulvescentibus.

♀ mari similis, sed semper obscurior.

Juv. pileo summo et colli postici lateribus nigricanti-brunneis: maculâ nuchali et facie laterali citrinis: dorso toto viridi-olivaceo, uropygio vix pallidiore: tectricibus alarum nigris, dorsi colore limbatis et flavicanti-albo apicatis: remigibus nigricantibus, primariis extùs griseo marginatis, secundariis dorsi colore limbatis: caudâ nigricante, rectricibus angustè olivaceo marginatis: gutture nigricante, vix viridi-olivaceo lavato: corpore medio subtùs citrino: hypochondriis fulvescenti-brunneis: rostro corneo ad rictum flavo: pedibus pallidè corneis.

Adult Male in spring plumage. Crown of the head glossy blue-black, enveloping the lores and enclosing the eye, whence it runs in a straight line over the ear-coverts; on the nape a very distinct white patch, which extends right down to the interscapulary region, where it widens out slightly, being bordered on each side by the black of the head, which extends along the entire length of the nuchal patch; cheeks, ear-coverts, and sides of the neck white; entire back clear slaty blue, the rump fulvous brown,

slightly dashed with olive; least wing-coverts uniform with the back, the median and greater coverts black, edged with slaty blue, and conspicuously tipped with white, which thus forms two distinct alar bars; quills greyish black, externally margined with silvery grey, the secondaries tipped with white; tail-feathers greyish black, externally margined with silvery grey, inclining to white on the outermost feather; entire throat black, widening out on the sides of the neck, and in some examples joining the black of the hinder neck, thus enclosing the white face; centre of the body whitish, the flanks clear buff, sometimes tinged with vinaceous; under wing-coverts whitish, slightly washed with buff; bill dark horn-, feet lead-coloured; iris brown. Total length 4·2 inches, culmen 0·4, wing 2·4, tail 2·0, tarsus 1·65.

Adult Female. Exactly similar to the male, but has the colours duller.

Winter plumage. So similar to the summer dress that scarcely any difference is perceptible in the colour of the back; a slight wash of olive pervades this part of the body; and the flanks are a little duller buff.

Young. Distribution of the colours much the same as in the adults, but more dingy; the black crown and sides of the neck, as well as the throat, dull sooty-black, the latter washed with olive; the back dull olive; the spot on the nape and cheeks yellowish; the white spots on the wing-coverts and tips to the secondaries yellowish white; under surface of the body yellowish; flanks fulvous brown; bill horn-brown, yellowish along the gape; feet fleshy brown.

As the Coal Titmouse of England has been so recently separated, there is doubtless much to be discovered respecting the various changes of plumage, and more especially concerning the geographical distribution of that bird. We are at present unable to state whether *Parus britannicus* migrates to the Continent in winter; but the specimens which have come under our notice have all been referable to the true *Parus ater*, which appears to be distributed over the whole continent of Europe, becoming rarer towards the south. How far to the eastward it extends we are unable to say, inasmuch as the Coal Titmouse of Eastern Siberia has recently been separated by Père David and Mr. Swinhoe as *P. pekinensis*; this bird is distinguished by its rather smaller size and longer crest-feathers. It is probable that the species referred to by the Russian travellers as *Parus ater* is the *Parus pekinensis* of Swinhoe.

That the true *Parus ater* occasionally visits Great Britain is apparent from two Norfolk specimens in the collection of our friend Mr. J. H. Gurney, jun., both killed in the early part of the year 1866. The appearance of this bird in Norfolk is not so remarkable, as there can be no doubt that the eastern counties of England form part of the line of migration adopted by many Scandinavian birds.

Throughout Scandinavia it is tolerably common everywhere; Collett records it from various parts of Norway, and states that near Christiania it frequents the fir-woods, but seldom visiting the non-evergreen groves. In Sweden, according to Nilsson, it inhabits the large pine-woods in the northern and central parts of the country, and on the fells is seldom seen above the fir regions. In Skåne it occurs in the autumn, and occasionally in the winter and spring. Sundevall gives its range in Sweden and Finland as rarely above 63° to 64° N. lat.; and Von Wright says it is common in Southern Finland, but rarer to the north. "According to Nylander it is common at Uleåborg," but he never saw it there; nor did Dresser observe it during his stay in that district.

In Russia and Poland it is found during the summer, but not so numerous as during the seasons of migration. As regards its range in those countries, Mr. L. Taczanowski writes to us that it breeds in Poland, but in small numbers. In winter, however, they are numerous, and it appears as if they were reinforced by arrivals from the north. Professor Kessler says that they arrive at Kiew late in the autumn, and pass the winter in company with other Titmice and small birds: he never observed them there in the summer season. According to Professor Bogdanoff it is common in autumn and early in winter near Kazan, and the bird-catchers assured him that it breeds there also.

How far to the eastward the true *P. ater* is found it is difficult to state with certainty; but Dr. Taczanowski writes to us that immature and adult birds obtained from Dauria and Lake Baikal by Dr. Dybowski agree precisely with European specimens.

Passing again to the westward, we find it common, but chiefly a migrant, in Livonia and Esthonia—also common throughout the whole of Germany, but numerous or scarce at different seasons of the year; for it generally moves northwards to breed, and wanders again to the south in the autumn. In Denmark it is recorded by Kjærbölling as not occurring in the summer but only in the autumn and winter. Mr. Benzon, however, writes to us that it certainly breeds there, as Mr. Erichsen found them numerous this last spring (1871), and expects to procure Danish-taken eggs this coming season; and Mr. Erichsen himself writes to us that when collecting in Jutland, in the summer of 1871, he found this species tolerably abundant in the pine-woods at Vester Palsgaard, and considers that it also occurs in many of the woods in Jutland during the breeding-season. In Holland it is, as we are informed by Mr. Labouchere, very common in some, but on the other hand is but rarely seen in other parts of the country; a few remain to breed in the provinces of Utrecht and Gelderland. Krœner gives it as a resident in Alsace, where it inhabits in summer the fir- and pine-forests in the mountains, spreading in autumn over the plains.

According to De Selys Longchamps it is found in Belgium more or less regularly during the winter, generally arriving in September and leaving in April. It is found throughout France, but is sedentary only in some portions of the country. In Provence it is migratory, but its appearances are irregular. In Spain our friend Mr. Howard Saunders records it as found near Granada and Cordova in the spring; and according to the Rev. A. C. Smith, "though scarcely a rare bird, this species does not seem to frequent Portugal as it does some other southern countries of Europe."

In Savoy, according to Bailly, it is common and sedentary. In the summer they are generally found in the pine-, spruce-, and larch-woods, and descend (except a few who brave the rigours of the winter) at the first frost, either to migrate south or to take up their quarters in the small non-evergreen woods on the hillocks at the foot of the mountains or on the plains. Giglioli found it common near Pisa; but, as a rule, Salvadori considers this species to be by no means abundant in Italy, where it passes the summer in the mountains, and, after nesting, descends to the plains in autnmn. Doderlein confirms this by stating that it is rare in Modena, and of irregular passage through the Emilia. In Sicily he records it as very rare in the lower districts, and only somewhat less so in the mountain-woods, especially those of Fiumedinisi, near Messina, where, according to Benoît, it nests. In Sardinia our friend Mr. A. B. Brooke says it is by no means common, and he has only seen a few in the ilex-forests, generally high up.

It has been recorded by Lord Lilford as occasionally seen in Corfu in the winter; and Messrs. Elwes and Buckley saw specimens, procured near Constantinople, in Mr. Robson's collection; Dresser also observed it on the Lower Danube during the winter. Dr. Radde writes that in the Crimea and Southern Russia it is found but rarely.

It does not occur in Algeria or Northern Africa, so far as we can ascertain; and its most southern limit appears to be the Lebanon, where Canon Tristram found it very abundant at the cedar-groves, but not in the lower mountain-ranges.

With regard to its range in Asia we give the following translations of the notes made by the Siberian travellers; but it will require further research to ascertain whether the Coal Titmouse of Eastern Siberia is the true *P. ater*, or whether *P. pekinensis* is a good species. We ourselves have been unable to procure a sufficient series of specimens from those localities to set the question at rest; but our friend Dr. Taczanowski assures us that specimens he has procured from there are certainly the true *P. ater*. Middendorff observed it in March and July at Udskoj Ostrog, and in August shot it on the island of Aehä. In the end of October he observed it in Mantchuria. Dr. von Schrenck found the Coal Titmouse abundant on the Lower Amoor, in the country which is covered with pine-, fir-, and larch-woods, and saw them in flocks almost daily at the Nikolajefsk post, in August, September, and October, frequenting conifer growth. Above the Nikolajefsk post he found it rarer as the conifer woods ceased, but still noticed it at Ssamahagdu Chome, Dshare, and in the Bureja Mountains; and Dr. Radde says that "this Titmouse lived at an altitude of 7000 feet above the sea (Kamardaban, at the south-east corner of Lake Baikal), where it was observed hard at work at the cones of the stone-pines." It is rarer on the Central Amoor, and he only now and then observed it in the Bureja Mountains. The bill is also considerably shorter, measuring only 3 lines (French). The Japanese bird, judging from three specimens obtained near Hakodadi by Mr. H. Whitely, and lent to us by their present owners Lord Walden and Canon Tristram, would appear to belong to *P. pekinensis*.

In Messrs. Horsfield and Moore's Catalogue of the Indian Museum there is said to be a specimen there from "Formosa," presented by Mr. Gould. It may be well to mention that this is not the Chinese Island of Formosa, rendered famous by Mr. Swinhoe's researches, but refers to Formosa, near Cookham, on the banks of the Thames, the scene of the capture of many rare British birds, when Mrs. De Vitré resided there and Mr. Briggs was gardener.

As will be seen from the above, the Coal Titmouse is generally distributed throughout Europe, but is far more abundant in the northern part of our continent, owing probably to its love of coniferous woods. According to the nature of the climate and the facilities for procuring the food it most affects, it is in some parts a migrant, arriving early in the spring, remaining to breed, and during the inclement winter-season seeking more genial climes, until the return of spring enables it to revisit its old haunts; in other parts it is a partial migrant, varying its home according to the facilities for procuring food, but not wandering very far; and, again, in other localities it is a resident, remaining near where it has nested throughout the whole winter.

The same may also be said of its congeners, *Parus major*, *P. palustris*, and *P. cæruleus*, all of which are more or less wanderers during the winter season, travelling about in small flocks from tree to tree, or hedgerow to hedgerow, diligently searching for food. It seems, however, to be the hardiest of all the above named, as in the north its wanderings appear to commence

later than those of the others. This Naumann also remarks, and states that it commences its migration about the middle of October, after all the rest are well on the move.

Like the other Tits, this bird also travels during the daytime, keeping away from the open country, and generally amongst larger trees, and joins in the same company with other Titmice, Goldencrests, Creepers, &c.

In its habits it is like the other Titmice, active, always on the move, and apparently continually looking after food, climbing about from tree to tree, carefully examining every cranny in the bark, often seeming to be actuated by curiosity rather than any other motive. It is agile and strong, like all its congeners, cruel, and will attack and kill a weak bird when confined in the same cage. Its flight is not easy, but jerky, and appears to cause the bird considerable exertion; still it does not fly worse than any of the other Titmice; it seldom, however, undertakes a flight of any great distance, but passes from grove to grove, resting wherever it can on the way. Its note is clear and loud, rather more modulated than that of the other Titmice, which it otherwise resembles.

Its nest is generally placed in a hole in a tree, sometimes near the ground, and at others high up the trunk. It often builds close to houses and in orchards. The nest is composed of straws, moss, and fine roots, and is well lined with hair, wool, or feathers; and in April or May the eggs, from eight to ten or twelve in number, are deposited. These are pure white, marked (chiefly at the larger end) with dark red spots and blotches. Dr. E. Rey informs us that forty-four eggs procured near Halle averaged 14·8 by 11·6 millimetres, the largest measuring 16·5 by 12, and the smallest 14 by 10·75 millimetres respectively. The breeding-season is from the 17th of April to the 7th of June; and it lays from six to eight eggs.

The nest of this species is not always placed in a tree, but occasionally it breeds in a hole in the ground. We give an instance of this in our article on *Parus britannicus*; and our friend Mr. Robert Collett, in his useful little work on the ornithology of Christiania, also gives an instance of this species nesting in the ground, which we translate as follows, viz.:—"On the 20th of June 1863 I found at Vasendrud, near Kræderen, a nest in a queer place. I was examining a sandbank where a vast number of Sand-Martins breed, and found in one of the holes a forsaken Coal Titmouse's nest full of rotten eggs. The Titmouse had probably built its nest and deposited its eggs, in what seemed to it a most comfortable place, before the arrival of the Martins; but when these latter arrived it was probably so frightened at the number of neighbours that it deserted its nest, leaving its eggs to perish."

Respecting its nesting-habits in Norway Mr. Collett also writes as follows:—"I have never known this bird to hollow out its own nest-hole as do *Parus borealis* and *Lophophanes cristatus*; but it makes use of any suitable hole, generally in a non-evergreen tree at the edge of a pine-wood; and I have not uncommonly found nests in holes in walls. It generally deposits eight eggs, which are sometimes laid as early as the latter part of April.

"Like the other species of Titmice, during the breeding-season the female of this bird has the peculiar habit, when it appears outside the nest-hole, of acting like a young bird; and often one is surprised at seeing early in May what one takes for a young bird calling with fluttering wings and following its parent; and when one shoots the supposed young bird, it turns out to be a sitting hen. The food of the Coal Titmouse consists during the spring and summer of insects and their

larvæ and a few seeds—and in the autumn and winter, of various noxious insects which they pick out from the crannies of the bark, various seeds, amongst which are the seeds of conifers; and if anywhere near habitations, they are fond of picking amongst the refuse cast out for fat."

The specimens described and figured are Swedish birds in our collection, sent us by our friend Mr. Meves. The one figured is an adult male in winter plumage.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a. Djurgarden, January 24th, 1864 (*Sundevall*). *b, c, d, e,* ♂. Stockholm, January 6th, 14th, 1872. *f,* ♂. Wermland, November 1871. *g.* Hesse, April 14th, 1868 (*Schlüter*). *h,* ♂. Westphalia (*Schlüter*). *i,* ♀. Mähren (*Schlüter*). *j.* Switzerland (*Möschler*). *k.* Piedmont, November 1868 (*Salvadori*).

E Mus. J. H. Gurney.

a. Northrepps, Norfolk, January 15th, 1866. *b,* ♂. Lakenham, Norfolk, spring of 1866.

E Mus. Salvin and Godman.

a, ♂. Borregaard, Norway, March 20th, 1859 (*P. Godman*).

E Mus. A. B. Brooke.

a, ♀. Pyrenees, April 25th, 1872 (*A. B. B.*). *b.* Bordighera, N. Italy (*A. B. B.*).

E Mus. H. B. Tristram.

a, b, ♀, *juv.* Cedars of Lebanon, June 16th, 1868 (*H. B. T.*).

E Mus. W. Schlüter.

a. Mähren. *b* ♂. Sweden, November 24th, 1867. *c,* ♂. Halle, November 1870.

E Mus. Vindob.

a, b, c. Austria (*A. von Pelzeln*).

PARUS BRITANNICUS.

(ENGLISH COAL TITMOUSE.)

Parus britannicus, Sharpe and Dresser, Ann. & Mag. Nat. Hist. (4) viii. p. 437 (1871).
Parus ater auctt. Britt. (nec Linn.).

Coal Tit, *Cole Tit*, *Cole Titmouse*, *Colemouse*, English.

Figuræ notabiles.

Gould, B. of Eur. iii. pl. 155; Yarr. Brit. B. i. p. 337; Gould, B. of Gt. Br. part 2.

♂ *vern.* pileo summo et collo postico laterali nitidè indigotico-nigris: plagâ nuchali magnâ, genis cum regione paroticâ totâ et colli lateribus, albis: dorso cinerascenti-olivaceo, uropygio fulvescente: tectricibus alarum minimis dorso concoloribus, medianis et majoribus et alâ spuriâ nigricantibus, extùs cinereo marginatis et conspicuè albo terminatis, fasciam duplicem alarem formantibus: remigibus cinerascenti-brunneis, extùs sordidè olivascenti-cinereo limbatis, secundariis intimis conspicuè albo terminatis: caudâ cinerascenti-brunneâ, rectricibus externè virescenti-olivaceo marginatis: gutture toto nigro: corpore reliquo subtùs albido, hypochondriis et subcaudalibus fulvescenti-brunneis: subalaribus albidis fulvescente lavatis: rostro nigricanti-corneo: pedibus plumbeis: iride saturatè brunneâ.

♀ *ad.* vix a mari distinguenda, paullò sordidior.

Ptil. hiem. similis ptilosi æstivæ, sed dorso omninò olivascente vel ochrascente distinguenda.

Pull. pileo brunnescenti-nigro, lanugine fuscâ posticè ornato: dorso clarè viridescenti-olivaceo: tectricum alarum maculis apicalibus flavicanti-albis: genis, colli lateribus et corpore toto subtùs lætè citrinis, hypochondriis paullò brunnescentibus: rostro corneo, rictu flavicante: pedibus brunnescenti-corneis.

Adult Male in spring plumage. Crown of the head glossy blue-black; a large white patch on the nape extending to the interscapulary region, and bordered on each side by the black of the head; cheeks, ear-coverts, and sides of the neck white; back greyish, with a strong wash of yellowish olive; the rump clear buff; least wing-coverts coloured like the back, the median and greater ones blackish, externally bordered with greyish, and conspicuously tipped with white, forming a double alar bar; quills ashy brown, edged externally with dull olive-grey, the innermost secondaries tipped with white; tail-feathers ashy brown, externally margined with greenish olive, especially near the base of the feathers; the entire throat black; the remainder of the under surface of the body whitish; the flanks and under tail-coverts brownish buff; under wing-coverts whitish, washed with buff; bill blackish horn-colour; feet leaden-grey; iris dark brown. Total length 4·2 inches, culmen 0·4, wing 2·3, tail 1·7, tarsus 0·7.

Adult Female. Seems to be exactly similar to the adult male, but the colours slightly duller.

Adults in winter plumage. Differ only from the spring livery in being much more olive on the back, and having the feathers a little duller, with scarcely so much gloss on the head.

Young. More yellow than the adults, being of a pale citron on the nuchal patch, cheeks, and underparts; the head brownish black, with tufts of grey down on the occiput; back greenish olive; spots on the wing-coverts yellowish white; flanks brownish.

Obs. The chief distinction between the Coal Titmouse of the British Islands and *P. ater* of the Continent consists in the olive-brown back of the former bird. From pictures and descriptions which we have seen in published English works it would appear, if these are really accurate, that our bird in summer becomes a little greyer on the back; but we have not ourselves come across a specimen which was without that olive-tinge which first induced us to separate the two forms specifically. Our friend Mr. J. H. Gurney, jun., was so kind as to procure for us a series of specimens killed by him on his estate at Northrepps in the spring of 1872; and they were all distinctly olive on the back, while one that was shot about the same time near Beverley by Mr. Boyes may, without exaggeration, be said to be yellowish olive in colour. Since we described the species, we have shown specimens of our English Coal Titmouse to several continental ornithologists; and they all declare that such a bird was never seen by them in their respective countries. We invite further attention to this subject.

Explanation of the Plate. On the Plate accompanying this article we have figured the three European Coal Titmice. The Algerian species (*P. ledouci*) is not unlike the immature birds of the other two. *P. ater* and *P. britannicus* are both figured in winter dress; so that the differences are very apparent.

This species, which we have found it necessary to separate from *Parus ater*, is the common Coal Titmouse of the British Isles, where it replaces the Blue-backed continental Coal Titmouse. So far as we have hitherto ascertained, it appears to be confined to Great Britain; but it may hereafter be found to straggle across to the Continent. In England and Wales it is tolerably common everywhere. Mr. Hearle Rodd records it as not uncommon in woods, especially in the eastern parts of Cornwall. Mr. Gatcombe finds it tolerably numerous in the woods of Devonshire during the whole year; we ourselves have often observed it in Sussex, Surrey, and Essex. Harting says that in Middlesex it is more numerous in autumn and winter, but resides in the country all the year round. He has found it nesting at Kingsbury, Edgeware, Elstree, and Harrow. Respecting its range in the United Kingdom, our friend Mr. J. H. Gurney, jun., writes to us that "Montagu, writing in 1802, says the Coal Tit 'is not so plentiful a species as the Marsh,' an assertion in which he was followed by Graves, Selby, Fleming, Jenyns, and Macgillivray, but which does not agree with modern experience. It is decidedly now quite as common as the Marsh-Titmouse in England, and in Scotland and Ireland much commoner. I have often noticed that you never find both common in one place; where one preponderates, the other is rare, and *vice versâ*, and the same with the Stonechat and Whinchat." Mr. Selby writes that in Scotland he found it abundantly in all the pine-forests, which seem to be its appropriate and favourite habitat, to the comparative exclusion of the other species. In these extensive tracts, covered by the natural growth of the country or planted by the great landed proprietors, it has both a secure retreat and a constant supply of food. And as regards its present range in that country we give the following notes sent us by Mr. J. A. Harvie-Brown, viz.:—"This species is exceedingly abundant in many localities in Scotland, but is far from being so in many others. For instance, in the east of Stirlingshire it does not equal in numbers either the Great Tit (*Parus major*) or the Blue Tit (*Parus cæruleus*), whilst in the west of the same county it

is perhaps the commonest of its genus, and is, as Mr. Robert Gray informs us, especially plentiful around the shores of Loch Lomond. In autumn and winter large accessions to their numbers take place; but this is more remarkable in some years than in others. After long-continued snow-storms these sprightly little birds may be seen feeding in considerable numbers on the ground around the holes and underneath the branches of fir trees in company with other Titmice, or diligently threading their way amongst the lower branches along with the Golden-crested Wren (*Regulus cristatus*). Generally in winter, during and after severe weather, they do not search for their food so much amongst the higher branches as at other seasons, but seem to confine their attention for the most part to those which are in closer proximity to the ground. The Cole Tit is a common species in the fir-woods around Roschall, as also in other fir- and pine-woods and plantations throughout the eastern portion of the county, but, as far as my own observation goes, seems to avoid the birch-woods much more than does its congener, the Blue Tit. In Caithness it is rare, according to Messrs. Shearer and Osborne, who observed it in that county in the spring and autumn of 1862, apparently for the first time. Doubtless, however, the Cole Tit is one of those sylvan species which will extend their northern distribution in Scotland as pine- and fir-plantations increase."

In its habits this species is full of life and active in all its motions, rivalling the Common Bluecap in the attitudes it assumes when in search of its food, clinging to the twigs and branches with the greatest ease, often head downwards, and in every kind of position. Its note is clear and shrill—if any thing, more melodious than the call of its congeners, and often sounds pleasant to the wanderer who passes through the gloomy solitude of the dense pine-woods, the silence of which is scarcely broken except by the note of the cheery Titmouse or the low feeble call of the Golden-crested Wren. Its flight is short and even, but laboured and somewhat weak, consisting of a succession of short, even jerks. It seldom appears to undertake a flight of any extent, but passes from tree to tree, confining itself chiefly to the woods.

The Coal Titmouse places its nest in a hole in the trunk or large branch of a tree, the nest itself being composed of a thick layer of moss and fine grass, and well lined with hair and wool. It does not, however, always choose the above-named place for the purpose of nidification, but it occasionally places its nest in a hole in the ground. In a letter from Mr. J. H. Gurney, jun., this gentleman informs us that he knows of an instance of the nest being built a foot below the surface, in a hole in the ground; and Mr. Stevenson, in his excellent work on the birds of Norfolk, also refers to the same peculiarity as regards the place selected for the purpose of nidification. It generally takes possession of some hole, when it breeds in a tree, and fashions it till it is suitable for its purpose. The chips it carries away, so as to avoid detection; and in writing to us respecting this, our friend Mr. George Dawson Rowley states as follows:—"I have myself observed a case where every chip the birds took out of the hole made for the nest had been carried to the top of a pollard tree to prevent discovery; in this respect the species displays a marked contrast to the English Woodpeckers, who scatter their chips all round without the least concern."

The eggs of the Coal Titmouse, from six to nine, and sometimes even more in number, are pure white in colour, spotted and marked, chiefly at the larger end, with bright red, and measure from $\frac{23}{40}$ by $\frac{18}{40}$ to $\frac{24}{40}$ by $\frac{19}{40}$. This species is very prolific; and Mr. J. Ranson, writing in the

'Huddersfield Naturalist,' mentions an instance of a hen Coal Titmouse which laid a third sitting of eggs and reared a brood, after two previous nests, containing altogether twenty-five eggs, had been robbed.

With regard to its distribution during the breeding-season, Mr. A. G. More says that it "nests all over Great Britain, to the far north: Mr. Dunbar finds the nest as far north as Sutherland. The late Mr. St. John also noticed the bird in the same county; and Macgillivray describes it as plentiful in the pine-forests in the north of Scotland."

The food of the Coal Titmouse consists of all kinds of small insects which infest forest trees (especially those found on the conifers), aphides, larvæ, &c., and also seeds and berries of various evergreens; our friend Mr. F. Bond writes to us that he has often seen the Coal Titmouse pecking at beech-nuts to get at the kernel, and that in the autumn it is very fond of the berries of the candleberry myrtle or snowberry, a common shrub in gardens.

Mr. Tegetmeier has recorded in 'The Field' the following particulars as to this species feeding on filberts:—"A few days ago my attention was called by Mr. Powell, of Brentford, to some specimens of filberts which had been attacked by a flock of small birds. These were so numerous as to have materially injured the crop. One of the birds was forwarded with the perforated nuts, and proved to be the small Coal Tit. I confess to having been sceptical as to the fact of so small a bird being capable of causing so great an amount of injury to hard-shelled nuts; but the microscope soon disclosed the fact that the contents of the gizzard (the Tits are destitute of a crop) were almost exclusively small particles of the kernels. With these were mixed a few small grains of grit and one or two limbs of insects. This observation is interesting, as it has generally been asserted that the Coal Tit feeds exclusively on insects and small seeds. Thus Montagu, in his 'Ornithological Dictionary,' states, 'it seems to live entirely on insects, as we have never been able to discover it partaking of flesh or grain with the other species.' There can be no doubt that the balance of good or evil effected by the Coal Tit is in favour of the former. During a great part of the year it is an insect-feeder, and its depredations on filberts appear not to have been previously recorded. A nest of young birds put into a cage were stated by Montagu to be fed principally on small green caterpillars."

We give the above note, as Mr. Tegetmeier has carefully verified the data; but at the same time we must say that we have often observed the Coal Titmouse in the filbert-gardens in Kent, and have never known it to bore into a nut unless it had been previously attacked by an insect.

The specimen figured in the Plate is one shot by Sharpe in September 1871, on the Marquis of Huntly's estate at Aboyne: those described are in our own collection, except the young bird, which is in the possession of Mr. J. H. Gurney, jun.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, b, c, d, e. Aboyne, Aberdeenshire, N. B., September 23rd, 1871 (*R. B. Sharpe*). *f, g, h, i, j, k.* Northrepps, Norwich, March 1872 (*J. H. Gurney*). *l, m, n, o, p, q.* Hampstead (*C. R. Davy*). *r.* Avington, Hampshire, November 4th, 1870 (*G. E. Shelley*).

E Mus. Lord Walden.

a. Cookham, Berks, December 1866 (*W. Briggs*). *b.* Hampstead, November 2nd, 1869 (*C. R. Davy*). *c, d.* New Forest.

E Mus. R. G. Wardlaw Ramsay.

a, b, c. Whitehill, Lasswade, N. B. (*R. G. W. R.*).

E Mus. Salvin and Godman.

a. Middlesex (*O. Salvin*). *b, c,* ♀. Surrey, January 1857 (*F. Godman*).

E Mus. H. B. Tristram.

a, ♂. Kingsbury, Middlesex, January 1864 (*J. E. Harting*). *b.* Castle Eden, Durham (*H. B. T.*).

E Mus. A. Basil Brooke.

a, b. Colebrooke, Brookeborough, December 1871 (*A. B. B.*).

E Mus. J. H. Gurney, jun.

a. Plymouth (*Bolitho*). *b,* ♀. Hetherset, Norfolk, winter of 1863 (*Gunn*). c, ♀. Keswick, December 12th, 1869 (*J. H. G.*). *d.* Beverley, Yorkshire (*Mr. Boyes*). *e,* nestling. Norfolk, 1864.



PARUS PALUSTRIS.

XXXV



1.2. MARSH TITMOUSE.
PARUS PALUSTRIS.
3. NORTHERN MARSH TITMOUSE.
PARUS BOREALIS
75

PARUS PALUSTRIS.

(MARSH TITMOUSE.)

Parus palustris, Linn. Syst. Nat. i. p. 341 (1766).
Parus cinereus communis, Baldenst. Neue Alpina, 1829, t. ii. p. 30.
Pœcile palustris, Kaup, Natürl. Syst. p. 114 (1829).
Parus salicarius, Brehm, Vög. Deutschl. p. 465 (1831).
Poikilis palustris, Blasius, List B. of Eur. p. 8 (1862).
Pœcile communis, Gerbe in Degl. & Gerbe, Orn. Europ. i. p. 567 (1867, ex Baldenst.).

Marsh-Tit, *Marsh-Titmouse*, English; *Mésange nonnette*, French; *Cincia bigia*, Italian; *Herrerillo*, Spanish; *Sumpfmeise*, German; *Zwartkopmees*, Dutch; *Sumpmeise*, *Graameise*, Danish; *Hångetite*, Norwegian; *Kärrmes*, Swedish; *Sinitza kamischevaya*, Russian.

Figuræ notabiles.

Gould, B. of Eur. iii. pl. 155. fig. 2; Yarr. Brit. B. iii. p. 340; Naum. Vög. Deutschl. v. Taf. 94; Kjærb. Orn. Dan. Afb. xxiii.; Schlegel, Vog. Nederl. pl. 129; Sundev. Svensk. Fogl. pl. xvi. fig. 6; Fritsch, Vög. Europa's, tab. 21. fig. 17; Gould, B. of Gt. Br. pt. x.

♂ *ad. æstiv.* pileo summo sericeo-nigro, usque ad nucham producto: dorso olivascenti-brunneo, scapularibus et tectricibus alarum concoloribus, his ad apicem albido terminatis: uropygio fulvescente: remigibus grisescenti-brunneis, primariis externè albido angustè marginatis, secundariis latiùs olivascenti lavatis: rectricibus grisescenti-brunneis, pallidè olivascenti lavatis, duabus externis angustè albido marginatis: genis et regione auriculari usque ad latera colli postica albidis: gutture nigro, parte inferiore marginibus albis obscurâ: corpore reliquo subtùs albido, hypochondriis fulvescentibus: rostro nigro: pedibus plumbeis: iride brunneâ.

♂ *autumn.* similis præcedenti, sed magis olivascens: plumis longioribus et magis lanuginosis: remigibus extùs magis olivascentibus: abdomine imo fulvescente.

Av. hornot. similis adultis sed ubique saturatior: pileo sordidè nigro, et corpore subtùs magis fulvescente: gutture fuliginoso-nigro.

Adult male in spring plumage. Crown of the head glossy black, extending just beyond the occiput, and forming a hood; cheeks, ear-coverts, and sides of the neck white, extending from the base of the bill backwards, running below the eye, and drawn almost as far back as the extremity of the hood itself, narrowing as it extends; back greyish brown, strongly inclined to olive, of which latter colour a very evident tinge is perceptible; rump much paler, inclining to yellowish brown; wing-coverts greyish brown, the outermost rather darker, and all of them so broadly washed with the olivaceous brown of the back that the dark bases to the feathers are entirely hidden, the greater coverts as well as the primary coverts rather plainly margined with whitish, more so in some specimens than in others; quills greyish brown, paler underneath, the primaries very narrowly edged on the outer web with whitish, these margins becoming obsolete towards the apex of the feather; the secondaries edged with greyish white, almost pure white on the innermost feathers, so that the margins here are very distinct,

the outer bases of the feathers also slightly tinged with olive-brown; tail greyish brown, washed with grey, purer and inclining to whitish on the tip of the penultimate feather and along the margin of the outermost; throat black, the feathers on the lower part of the throat obscured by white margins; breast white, the sides of the breast and flanks tinged with faint buff; nasal feathers blackish; bill black; iris brown; legs lead-coloured. Total length 4·6 inches, culmen 0·35, wing 2·55, tail 2·25, tarsus 0·55.

Male in autumn plumage. More olive-brown than in spring on the upper surface, consequently the lighter colour of the rump is not so apparent; the feathers also longer and more woolly; the outer web of both primaries and secondaries much more olive, all the grey tint of the feathers and the whitish edgings being obscured; tail-feathers scarcely differing from the spring plumage, but not so grey; throat-spot about the same size as in spring; breast-feathers more woolly, and the buff of the flanks extending more on to the belly than in spring.

Male from England. Very much darker than continental specimens, the back especially; the rump much paler than the rest of the back, and inclining to rosy white; cheeks and centre of the body underneath dingy white; the flanks dark buff, this colour also extending on to the abdomen.

Young. All the markings of the adult characteristically indicated, but the general appearance of the body-feathers more woolly; head deep sooty black; back dark olive-brown; rump very much paler, of a rosy buff-colour, and contrasting strongly with the brown of the back; wing-coverts coloured like the back; quills dark greyish brown, the primaries very narrowly margined with white on the outer web, the secondaries more plainly edged with clear brown, almost rufous, rather inclining to olive-brown near the base of the inner primaries; tail greyish brown, narrowly margined with olive-brown, the outer tail-feathers very conspicuously edged with whitish; cheeks and ear-coverts white, extending only a little way down the sides of the neck; throat dull black with a few whitish markings on the edges of the feathers; under surface of the body rosy white, deepest on the flanks; bill black; feet paler than in the adult. Total length 4·1 inches, culmen 0·35, wing 2·25, tail 1·85, tarsus 0·55.

A TRUE history of the Marsh-Titmouse is very difficult to write, in consequence of the refusal of many good naturalists to recognize the difference between this species and its nearly allied, but certainly distinct, congener, *Parus borealis*. We hope in our account of the latter Titmouse to thoroughly point out the distinctions between the two species; and after that no doubt a complete history of the two birds, giving their respective geographical ranges, will be rendered possible. The accuracy of the present account, therefore, may in some instances be impugned by the testimony of future observers; but we have been working with such excellent series of both species before us, and from so many localities, that we believe the statements made in this article may be sufficiently relied on.

Its breeding-habitat in England is thus given by Mr. A. G. More:—"Throughout England and Wales; becoming scarce in Scotland, where it is mostly found in the Lothians. Nests regularly in Haddington (*Mr. A. Hepburn*), regularly in Linlithgow (*Mr. T. D. Weir*), and occasionally in several other counties of subprovince 28. The Marsh-Titmouse extends to Fifeshire, according to Macgillivray, and breeds in Perthshire (*Mr. A. Pullar* and *Mr. J. Lamb*), occasionally in Aberdeenshire (*Mr. T. Edward*), and even as far north as Inverness (*Mr. W. Dunbar*). This bird can hardly be supposed wanting in subprovinces 16 and 19, though it is not included in either list of the nesting-birds of Lincolnshire, where Mr. Adrian informs me that it has only been noticed as a rare visitor." Soon after the above statement was published,

Mr. E. R. Alston, in 'The Ibis' (in a letter dated "Stockbriggs, Lanarkshire"), states that the Marsh-Titmouse "breeds here regularly, and is by no means a rare species, although not so plentiful as *P. ater*," this locality not being included in Mr. More's list. Mr. Alston likewise writes to us:—"The Marsh-Titmouse is rare or local in most parts of Scotland, and appears to be totally absent in some districts, as I have already notified; in South Lanarkshire it breeds regularly, and is far from uncommon." The accompanying observations have likewise been contributed by the Duke of Argyll to Mr. Gould's 'Birds of Great Britain':—"I have never seen it in Argyll- or Dumbartonshire, whilst its closely allied congener, the Coal Tit, is very abundant. This is a curious case of restricted distribution, which it is difficult to connect with any special conditions of food or climate. In the neighbourhood of London the Coal and Marsh Tits seem equally common, nor have I observed that in England marshlands are at all particularly the habitat of the Marsh-Tit. I may add that I have never observed the Marsh-Tit in Scotland at all; but my opportunities of observation have been chiefly in the western counties." Our friend Mr. J. A. Harvie Brown sends us a note:—"This is a species which I am strongly inclined to consider is rapidly pushing its range northward. As long ago as 1860 I shot one specimen of the Marsh-Titmouse in Mid Lothian, and obtained a nest and eggs, which I was assured had been taken at Duddingstone Loch, near Edinburgh; at that time it was considered a very rare bird in that district. For several years afterwards I only observed an occasional pair, and then always in the autumn; but within the last three years it seems to have become of much more frequent occurrence in the midland counties of Scotland. I have in that time seen whole flocks in autumn and winter; and every spring I see pairs of birds in suitable localities. On Monday last, April 17th, I saw one bird in a small glen west of Stirling; and during last winter I obtained several specimens. Mr. E. R. Alston reports them as quite an abundant species in Lanarkshire, and as having been so for some years past." Mr. R. Collett says that in Norway it is "chiefly limited to the southern and western parts of our country, and is found abundantly up to Trondhjem. Above that it is said to occur; but probably *Parus borealis* is meant. On the fell-sides it seldom ranges above the boundary of conifer-growth. Messrs. F. and P. Godman, in their paper on the Birds observed at Bodö during the spring and summer of 1867, remark, "One example only of this bird was noticed by us, on June 30th." At Lofoten, in Norway, G. R. Barth found it in birch-thickets, but singly, and not, as it is generally found in Southern Norway, in large companies. Nilsson remarks that in Sweden it ranges up into the Polar Circle, and is found on the Fjelds as far as the birch-growth extends. Mr. Meves says that it occurs here and there in Öland, but is not found on Gothland. Our friend Mr. Benzon tells us it is pretty common all over Denmark in damp places, where hollow trees offer a suitable site for building-purposes. Pallas says it was met with all over Russia and Siberia; but we must state our opinion that this author has confused some of the allied species in his account of the Marsh-Titmouse. Mr. Swinhoe now excludes the true *Parus palustris* from the avifauna of China.

In the Baltic provinces of Russia, Mayer records it as common; and it is equally abundant in Germany, the Netherlands, Belgium, and France. In the southern portion of the latter country, however, MM. Jaubert and Barthélemy Lapommeraye say that it becomes rarer, and in fact is only found accidentally at the commencement of winter. Mr. Howard Saunders writes to us to the

effect that in Spain he observed this species among the poplars and willows of the Guadalquivir, near Cordova, and also along the Genil, near Granada, in early spring; but he can say nothing as to its breeding there. Near Gibraltar Major Irby has never met with it. It is included in Professor Barboza du Bocage's list of the birds of Portugal; but no remarks as to its distribution or rarity are given by the learned author, while in the more recent essay of Mr. A. C. Smith it is altogether omitted.

Bailly gives it as very common in Savoy during the whole year; and in Styria also it is stated by Seidensacher to be abundant. Herr von Pelzeln kindly informs us that this bird is only seen in Galicia in autumn and winter. In the Museum at Vienna are specimens collected in Austria in October, and in Eastern Galicia in January. "In Northern Italy," writes Count Salvadori, "I have found this species pretty common on the plains, both in spring and autumn. In Central Italy it is generally to be found on the mountains, where I have seen them flying among the beech bushes not far from water. During the winter they are often to be seen in the markets at Pisa and Rome. It has not yet been observed in Sardinia." Professor Doderlein states that "it is tolerably abundant in the neighbourhood of Modena, where it frequents low woods, and makes its nest in the holes of the trunks of willows. In October a partial migration to the south takes place; but many remain during the winter." Lord Lilford believes that it is a resident species in Epirus. Von der Mühle found it in the forests of Roumelia in winter, and says it likewise breeds there. Lindermayer states that in Greece "this Titmouse lives on the edges of the lakes and swamps, on the lakes Kopais, Topolias, and Trichonia, near Agrinion, in Akarnania, where it has also been found breeding. It does not occur on the islands."

Mr. Robson has not sent us his accustomed notes on the present bird; so we are unable to give any account of the species in Turkey; Messrs. Elwes and Buckley are also silent on the subject; but that it occurs both in Turkey and in Asia Minor is evidenced by the fact that the last-named gentlemen noticed specimens in Mr. Robson's collection, and we have received from the same indefatigable collector a specimen from Guiken, in Asia Minor. Professor Nordmann says:—"This species is wanting both in the steppes of Southern Russia, and, as it seems, in the Crimea, whereas it abounds in the eastern provinces of the Black Sea. I have often seen in the province of Ghouriel, at the foot of the mountains, a species closely allied to *Parus palustris*, but was unable to procure one, as these birds fly in families and frequent the tops of the highest trees, whence they utter a clear and peculiar note, different from that of *Parus palustris*." This fact, from the pen of so good a naturalist, points to the existence of a second species in Southern Russia, which may possibly turn out to be *P. lugubris*.

In its general habits the Marsh-Titmouse has much in common with the Blue Titmouse; and we see no reason why a generic separation of the two birds should be maintained. The plumage in the Marsh-Titmice is perhaps more fluffy, particularly in winter, and the bill is stronger, the robustness of the latter being evidenced by the vigorous manner in which the little bird taps; and this fact cannot fail to have been noticed by any one who has kept the bird in confinement. Mr. Alston writes:—"I have observed a pair of Marsh-Titmice searching for insects on the trunk of a Scotch fir, prizing off the loose scales of bark with their bills with such force that a piece struck me in the face at some distance. This species may be readily recognized by its note, a long drawn 'pey, pey.'"

Bailly gives the following account:—

"The Marsh-Titmouse is one of those that remain with us in Savoy all the year, and is common. It appears to affect orchards, woods in damp localities in the plains, hillocks, and is seen amongst the willows, ash trees, poplars, and alders that border the marshes, rivers, or water-courses. It seems to be rarer, even in the autumn, in the Alps, and on the sombre conifer-forests in the central regions whither the *Parus alpestris* is so fond of resorting.

"Its habits are similar to those of the Blue Titmouse, in company with which it may often be seen in the parks and orchards, but it appears to me always to be less fierce and cruel. It is easily caught by the peasants, and in captivity is tractable, though it does not seem to thrive well. Its food consists of caterpillars, flies, the larvæ of wasps, bees, and other insects, moth and butterflies' eggs, seeds, particularly those of the sunflower, and buds of fruit-trees.

"In October they commence to travel about, making excursions about the country until the first snow appears. Then many flocks arrive, either alone or in company with Cole-Titmice, and fix their habitation in the woods on the plains, or those on the adjacent hills. In March, a few days before the pairing-time, they seek for suitable breeding-localities."

Respecting the habits and nidification of this bird we copy the following notes from Mr. Gould's splendid work on the Birds of Great Britain:—"The Marsh like the Coal Tit inhabits all the great woods in the neighbourhood of the Thames and other parts of England; it also frequents coppices, hedgerows, and swampy grounds; and I have not failed to observe that it affects the lower trees and shaws, while the Coal Tit resorts to the higher branches of tall beech-trees in chalky districts as well as those of flat alluvial land; not so, however, the Marsh-Tit; for, although not excluded from such situations, it is less frequently found there.

"In its nesting and in its general mode of nidification it also slightly differs from its frequent associate the Coal Tit, the nest being generally placed in a stub near the ground or in a bank-side. It varies in size according to the nature of the situation in which it is placed, being sometimes as small as a cricket-ball, at others half the size of a man's hat. Rabbits' down is a favourite material, and I have seen nests composed almost entirely of it. One taken from a hole in a birch tree was compact, cup-shaped, smooth both externally and internally, and mainly composed of rabbits' hair interwoven, on the inner side, with minute chips of dried grasses, and on the outer side with fine moss; another, taken at Formosa, in Berkshire, was a thick matted structure of moss and dog's hair, the former predominating on the outside and the hair inside. As an instance of the great care some birds take to prevent the detection of their nests, Mr. Bond tells me that he once observed a pair of Marsh-Tits, who were excavating a hole in an old tree as a deposit for their intended nest, carefully carry away the bits of wood in their beak one by one, fly over a neighbouring hedge, and there drop them—a trait in the bird's economy which is not generally known, although it had been previously noticed by the celebrated Colonel Montagu, who 'had seen it excavating the decayed part of the willow, carrying the chips in its bill to some distance, always working downwards, making the bottom for the reception of the nest larger than the entrance, and the nest composed of moss and thistle-down, sometimes a little wool, and lined with the down of the thistle.'"

Mr. Alston further observes:—"In its habits it resembles the rest of the genus, keeping together in family parties in the summer, and consorting with other Titmice in the winter."

Lord Lilford also writes to us:—"All the Titmice appear to gather together in February. I have often seen during that month many individuals of the five common species, *P. major*, *P. ater*, *P. cæruleus*, *P. palustris*, and *Acredula caudata*, all busy after insects, within a few yards of each other, and mixed together on low bushes close to the house."

For the following account we are indebted to the kindness of Mr. A. Benzon, of Copenhagen:—

"In Denmark it is named *Sumpmeise* or *Graameise*, while, on account of the colour of its head, it is generally called *Svartkop*. It appears to be more able to accommodate itself to circumstances than the Great or Blue Titmice, and makes use of holes not only low but quite high up in the trees. It has eggs rather earlier than the Blue Titmouse, and fewer in number. At Dyrehaven I found a nest on the 5th of May 1870, with six incubated eggs; and in 1856, when in company with my ornithological friends, we found on the 9th of May one nest with six strongly incubated eggs, a second with five fresh, and a third with seven fresh eggs. The spots are darker than those on the Blue Titmouse eggs, and show more tendency to collect in a circle round the larger end, and are about the size of that bird's eggs."

Mr. H. M. Labouchere sends us the accompanying note:—"The Marsh-Titmouse, although not very common in the sea-provinces, nor even, as its name would imply, in the low and marshy districts of the North of Holland, is very abundant in the districts where pine-woods abound; and I have often seen large flocks of them flying about in company with Cole-Tits and Crested Tits. I have caught a great many of these birds, and succeeded in keeping several of them in cages for a considerable length of time. Like all birds of their tribe they bear their captivity with much cheerfulness, but never lose an opportunity of effecting their escape when practicable. It is wonderful to see the number of flies and other insects they can consume in a short space of time; and this great appetite of theirs may be turned to good account by letting one of these birds loose in a room where those insects have become a nuisance."

The Marsh-Titmouse makes its nest in the hollow of any tree suitable for its purpose, and constructs it of moss, fine grass, &c. lined with wool or feathers. The eggs are from eight to twelve in number.

In a series of the eggs of this Titmouse in Dresser's collection, obtained chiefly at Ilovetz, Wallachia, by himself, we find that they vary but little in size or shape, the largest measuring $\frac{26}{40}$ of an inch by $\frac{20}{40}$, and the smallest $\frac{25}{40}$ by $\frac{19}{40}$.

In colour they are pure white, dotted all over with scattered dull red dots. One egg is altogether white, with one or two small red dots and a large red smudge at the larger end. Compared with the eggs of the Cole-Titmouse, the spots are larger and more scattered than in the eggs of that bird, but they are hard to separate.

The descriptions are taken from Scandinavian examples in our own collection, the spring plumage being described from a male shot in Denmark in May 1870, and sent to us by Mr. Alfred Benzon, the autumnal dress from a Swedish specimen killed near Stockholm on the 23rd of October 1861, and given to us by Professor Sundevall. In the Plate is given a figure of a Scandinavian bird, in winter dress, to illustrate the true *Parus palustris* of Linnæus. In the Plate of *P. borealis* will be found a figure of the English Marsh-Titmouse side by side with true *P. palustris* and *P. borealis*, all in summer plumage. It will then be seen how much darker are English specimens than those procured on the Continent; and we trust that all our ornithological

friends will unite in an endeavour rightly to distinguish the geographical ranges of the Marsh-Titmice, especially as regards their distribution in Siberia. A few remarks as to the different species may not be out of place here; and we feel that we cannot do better than give the observations of the renowned Swedish naturalist, Professor Sundevall, published in his 'Birds of Sweden.' He writes as follows:—"*P. palustris* is distributed all over Southern Sweden up to 61° N. lat., when *Parus borealis* takes its place entirely in Norrland and Lapland. *Parus palustris* is also found throughout Central Europe. I have examples from Belgium and Germany. It is probably found also in Southern Europe; but the extent of the range of the allied species, which have in later years been described, is not yet defined. The difference between this *P. borealis* and several foreign forms is scarcely more than in the different races of Sparrows, Redpolls, and others; and one is doubtful if they ought to be considered really different species or only varieties of one species. In the mountainous regions of Southern France and on the Alps there is another form (*Parus alpestris*, Bailly, *P. lugubris*, Fairm.), which is closest to *P. borealis*, but is rather larger. In North America there are two species, of which the one (*P. atricapillus*) is rather larger, and the other (*P. carolinensis*) rather less than our two species; both differ but little from the European birds, but have more black on the head, and especially on the throat.

"Though this bird and *P. borealis* resemble each other so closely, they are easily distinguishable by their note. The call-note of *P. palustris* is clearer and more melodious. The note has been well described by the words *dia dia hizi ä ä*; but besides these notes it utters several variations of the same sound, in which the long-drawn harsh *ä*-note occurs, which distinguishes it from *P. borealis*."

M. Victor Fatio has given an admirable account of *P. borealis* in Switzerland, which will be found thoroughly detailed in the history of the last-named bird; and it will be seen that he argues with reason on behalf of the *P. alpestris* of Bailly being only a climatic and intermediate variety of *P. borealis*, with which it must be united. But it is more with respect to the Siberian species that confusion exists. The exact ranges of *Parus baikalensis* of Swinhoe, and of *P. kamschatkensis* of Bonaparte, have yet to be determined. The latter is certainly a good species; but as regards the former bird we are by no means so certain. Mr. Swinhoe has evidently got a bird in autumnal or winter dress; and judging from a Japanese skin, which seems to be referable to the lately described species, kindly lent us by Canon Tristram, we believe that it will be found extremely difficult to separate *P. baikalensis* from *P. palustris*; but in a comparison of specimens care must be taken to have the true Scandinavian species, and not the sombre English subspecies.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, b. Denmark, May 1870, and January 22nd, 1871 (*A. Benzon*). *c.* Stockholm, October 23rd, 1861 (*C. J. Sundevall*). *d.* Cookham, Berks, February 1st, 1871 (*J. Ford*). *e, f, g, h.* Hampstead (*C. Davy*). *i.* Piedmont (*Salvadori*). *j.* Mount Olympus, November 11th, 1869 (*Th. Krüper*). *k.* Guiken, Asia Minor, November 1st (*T. Robson*).

E Mus. Howard Saunders.

a. Hampstead (*C. Davy*).

E Mus. H. B. Tristram.

a. Castle Eden, Durham (*J. H. Gurney*). *b, c*. Greatham, Durham (*H. B. T.*).

E Mus. Lord Lilford.

a, b. Lilford, March 1867 (*L.*).

E Mus. J. H. Gurney, jun.

a, b, c, d. Castle Eden, Durham (*J. H. G.*). *e*. Greatham, Durham (*J. H. G.*). *f*. Darlington (*J. H. G.*). *g*. Catton, Norfolk (*J. H. G.*).

PARUS BOREALIS.

(NORTHERN MARSH-TITMOUSE.)

Parus cinereus montanus, Baldenst. Neue Alpina, ii. p. 21 (1829).
Parus borealis, De Selys-Longchamps, Bull. Ac. Roy. Brux. p. 2 (1843).
Pœcila borealis, Bonap. Consp. Gen. Av. i. p. 230 (1850).
Parus lugubris, Fairmaire, Rev. Zool. 1850, p. 276 (nec Natterer).
Parus alpestris, Bailly, Bull. Soc. Hist. Nat. Savoie, 1851, p. 22.
Parus fruticeti, Wallengr. Naumannia, 1854, p. 141.
Pœcila alpestris, Brehm, Naumannia, 1855, p. 286.
Pœcila assimilis, id. tom. cit. p. 286.
Pœcila salicaria alpina, id. Naumannia, 1865, p. 370.
Pœcila salicaria borealis, id. tom. cit. p. 370.
Pœcila salicaria assimilis, id. tom. cit. p. 370.
Parus baldensteinii, De Salis, Mem. Soc. N. H. Grisons, n. f. viii. p. 106 (1861).
Poikilis borealis, Blasius, List B. of Eur. p. 8 (1862).
Poikilis alpestris, id. op. cit. p. 8 (1862).
Pœcile palustris, Gerbe in Degl. & Gerbe, Orn. Europ. i. p. 565 (1867, nec Linn.).
Pœcile borealis, Gray, Hand-l. of B. i. p. 232 (1869).
Pœcile alpestris, id. tom. cit. p. 232 (1869).

Talltita, Swedish.

Figuræ notabiles.

Bailly, Orn. de la Savoie, iii. pl. 3. figs. 1–8; Naum. Vög. Deutschl. xiii. Taf. 379. figs. 2, 3; Fritsch, Vög. Eur. tab. 21. fig. 11; Bree, B. of Eur. iv. p. 214; Sundev. Sv. Fogl. pl. xvi. fig. 7; Fatio, Bull. Soc. Orn. Suisse, i. pl. 2.

♂ *ad. æstiv.* pileo summo, nuchâ et auchenio toto fuliginoso-nigris: facie laterali albidâ posticè productâ cum colli lateribus concoloribus utrinque pilei nigredinem marginantibus: dorso cinerascenti-brunneo, uropygio et supracaudalibus fulvescentibus: tectricibus alarum remigibusque grisescenti-brunneis, extùs dorsi colore limbatis, secundariis albidiore marginatis: caudâ grisescenti-brunneâ, rectricibus cinerascente marginatis, duarum exteriorum marginibus conspicuè albicantibus: gulâ fuliginoso-nigrâ, corpore reliquo subtùs fulvescenti-albido, hypochondriis et corporis lateribus lætiùs fulvescentibus: subalaribus albidis: rostro saturatè corneo: pedibus plumbescenti-brunneis: iride brunneâ.

♀ *ad. æstiv.* mari simillima, sed sordidior: secundariis dorsi colore nec albido marginatis.

Adult Male in summer plumage. Crown of the head, extending backwards even to the interscapulary region, sooty black, without any gloss; sides of the face entirely white, joining the sides of the neck, which are also white, and extending backwards on both sides of the head, skirting the black crown along its whole extent; back pale cinereous grey, slightly inclining to fulvous on the rump and upper tail-coverts; wing-coverts greyish brown, washed with the same colour as the back; quills also greyish

brown, the primaries margined externally with ashy grey, the secondaries with greyish white, giving them a hoary appearance; tail greyish brown, the feathers edged with pale ashy grey, becoming hoary white on the two outermost; entire throat sooty black, with a very few whitish margins to the lateral feathers; rest of the under surface of the body dull white, inclining to brownish on the flanks and thighs; under wing-coverts dull white; bill blackish horn-colour; feet leaden-brown; iris reddish brown. Total length 4·6 inches, culmen 0·4, wing 3·45, tail 2·2, tarsus 0·65.

Female in summer plumage. Rather duller than the male, especially underneath, and having the secondaries edged with the same ashy brown as the back, instead of having the margins hoary grey.

Winter plumage. In winter the plumage is decidedly more fluffy, the margins to the quills and tail-feathers are broader, causing the hoary appearance on the outer edge of the secondaries to show with greater distinctness. The black feathers on the throat are all margined with whitish.

Obs. Notwithstanding that many good ornithologists unite in considering the present species as synonymous with the Common Marsh-Titmouse, we have no hesitation in declaring our opinion that it is quite a distinct bird, the characters by which it is known being as follows:—

1. The head is dull sooty black, without any blue gloss as in *P. palustris*; and the black crown is continued far down on to the interscapulary region, being bordered for its whole extent by the white cheeks and sides of the neck.
2. The colour of the back is ashy grey, and not nearly so brown in *P. palustris*.
3. The edges to the secondaries are whitish, and very distinct.
4. *P. borealis* is rather larger, and, according to the testimony of several observers, differs in habits and in its note.

Mr. R. Collett, who has carefully investigated the question as to the validity of this species, fully believes that it is perfectly distinct from the Marsh-Titmouse, and grounds his belief on the following facts which have come under his personal observation. He writes to us:—"This species affects spruce woods, whereas the Marsh-Titmouse prefers non-evergreen woods; the call-notes of the two species differ considerably, that of the Northern Titmouse being sharper, and the final *æh* more lengthened, and as if divided into two notes; the nests of the two species differ considerably in structure." Mr. Collett gives the distinctive characters categorically; and we cannot do better than translate what he says on the subject, as follows:—"*Parus palustris* has the cap black, with strong reflections, and it extends only to the nape, whereas in *P. borealis* it is plain black without gloss, and extends on to the back. *P. palustris* has the cheeks white only under the eye, otherwise light grey; whereas the cheeks of *P. borealis* are white all over and all round, only being divided by the cap. In *P. palustris* the closed wing is narrowly edged with dark brown, whereas in *P. borealis* it is broadly edged with light grey, almost white. The colour of the back in *P. palustris* is brownish, and in *P. borealis* grey. The outer tail-feather in *P. palustris* is about 1 line shorter than the middle one, and in *P. borealis* 3½–4 lines shorter. The nest of *P. palustris* is always placed in healthy non-evergreen trees, whereas that of *P. borealis* is always in a dead stem or branch; and *P. borealis* forms the hole itself, whereas *P. palustris* makes use of any old hole. The nest of *P. palustris* is constructed of moss, feathers, and straws, whereas that of *P. borealis* invariably is constructed of *bast* (or fine bark strips), and sometimes a few hairs or feathers." Our own observations, it will be seen, agree almost precisely with those of Mr. Collett; but we cannot accept as of specific importance the difference in the graduation of the tail-feathers; for we have found specimens of *P. borealis* with a perfectly square tail, and *P. palustris* with a graduated one. Further evidence as to the distinctness of the two birds is adduced by Mr. Wheelwright, who observes in his 'Spring and Summer in Lapland':—"I believe it is, however, admitted now that this *Parus borealis*, De Selys, is nothing more than the northern form of the *Parus palustris*. To me the note appears very different; and I invariably

find the nest of the *P. borealis* in the deep forest, never by water, built always of the inner fibres of the bark of some dead tree, probably the willow or alder."

Pastor Brehm has written an essay on the Marsh-Titmice in 'Naumannia' (*l. c.*), in which, as usual, he divides all the European ones into a number of species which we cannot recognize or identify. At the same time there can be no doubt that the variations, which are coincident with locality, have been very much overlooked; and we propose therefore to give a short review of the specimens of the European Marsh-Titmice now before us, with a *résumé* of some of the literature connected with them.

British Islands. Compared with the true *P. palustris* of Sweden, our English Marsh-Titmouse is a very much darker bird, and has the head slightly browner and less glossy. As, however, there are many continental specimens which, in their winter dress, approach British examples, we feel that it would not be advisable to bestow a specific name on our insular form, as the distinctions are not so clearly characterized as in the Coal Titmice. That our island bird, however, is constantly darker is apparent on comparison of a series of specimens from Great Britain and the Continent. Mr. R. G. Wardlaw Ramsay has kindly lent us some Scotch specimens which exactly agree with English birds; but as the species is apparently still pushing its range northwards, it will be interesting for our descendants to notice whether a more mountainous habitat succeeds in inducing a corresponding change in plumage.

Norway. We have already given Mr. Collett's remarks on the two Marsh-Titmice in this country. Our friends Messrs. Alston and Harvie Brown have also lent us a series of specimens obtained by them during their Norwegian trip. Out of six Titmice procured by them, only one bird, killed at Skæien i Land on the 15th of May, 1871, belongs to the true *P. palustris*; all the rest, shot at Vossevangen on the 22nd, 23rd, and 24th of the same month, are *P. borealis*, one female bird being procured from the nest. Messrs. Salvin and Godman have likewise lent us two specimens in their collection from Sarpsborg in Southern Norway, where they were obtained by Mr. Baker during his journey in June and July 1866.

Sweden. From this country, whence came the types of both *P. palustris* and *P. borealis*, we have a nice series of specimens, for which we have principally to thank our excellent friends Professor Sundevall and Mr. Meves. We have already noticed our specimen of *P. palustris* in autumn plumage, which the former gentleman gave us; and we have besides twelve of *P. borealis*, shot at all seasons of the year, from the autumn and winter to the full summer, &c. There is not apparently in the Scandinavian bird a really distinguishable autumn plumage, such as we have noticed in *P. palustris*, although the winter garb of the species presents some differences, which we have referred to above.

Denmark. Two specimens of *P. palustris* sent by Mr. A. Benzon differ considerably from one another—one that was shot in May 1870 being much paler grey than another, which was killed in January 1871; this difference, however, may be due to the season of the year, as the ordinary Marsh-Titmouse appears to undergo a more decided seasonal change of plumage than its congener *P. borealis*.

Germany. We have only two specimens from this country, both referable to *P. palustris*. For the loan of them we are indebted to our friend Mr. Schlüter, of Halle; and from these specimens it also appears that the back is much darker in winter than in summer, and at the former season of the year more closely approaches the British form.

Switzerland and Savoy. The Marsh-Titmice from these countries are of some interest, as it was here that Baldenstein first discovered the existence of two species in Europe, and Bailly procured the types of his *P. alpestris*.

M. Victor Fatio, a well-known Swiss ornithologist, has written a most exhaustive account of the present bird, which we translate for the benefit of our readers, in order that the whole of the evidence of the bird's distinctness may be before them. In the 'Bulletin' of the Swiss Ornithological Society (vol. i. p. 79) he writes as follows:—

"This Titmouse, so long involved in obscurity, has furnished material for so many divers opinions, that it seems to me to be not altogether useless to study its characters once more, and to examine without any

preconceived ideas on the subject, by the study of its different forms, whether we should separate entirely *Parus borealis* (Linn.), *P. alpestris* (Bailly), and *P. borealis* (De Selys), or distinguish specifically only the first and last, making the second only a peculiar form of *P. borealis*. The Alpine or Northern Titmouse has been observed and recognized as distinct from the Marsh-Titmouse, first of all in the Grisons, in Switzerland, by Conrad de Baldenstein, who described the so-called Alpine form under the name of *Parus cinereus montanus*; then, a little later, by De Selys-Longchamps, who described it from a more northern locality, under the name of *P. borealis*; then again by Bailly, who, having found it in Savoy, named it successively *P. lugubris*, *P. alpestris*, and *P. borealis*, believing altogether in the possibility of there being two distinct species. Procured in Scandinavia, it was described by Wallenstein under the name of *P. fruticeti*; killed at Salève, near Geneva, in June 1840, it was placed by M. G. Fatio, under the name of *P. alpestris*, in a group of Grey Titmice, along with *P. sibiricus*, *P. lugubris*, *P. palustris*, *P. borealis*, and *P. atricapillus*. Lastly, M. de Salis has once more described it quite recently under the name of its first describer, *Parus baldensteinii*.

"I have myself studied these Titmice in our Alps, and have arrived at a firm conviction that *P. alpestris* is nothing more than a peculiar form of *P. borealis*, but that it still possesses good characters whereby it may be specifically distinguished from *P. palustris*. Having followed this Titmouse from the plain up to the limits of vegetation, it was evident to me, as I ascended the sides of the mountain, that first of all there was a decided jump from *P. palustris* to *P. alpestris*, but a gradual and continuous transition from the last-named to the true *P. borealis*. The more the northern form inhabits elevated localities in the Alps, the more does its size and coloration approach those of the North-European bird; and, *vice versâ*, the more it inhabits the lower parts, the more it loses, naturally, the characters which a more rigorous climate had bestowed upon it. We can see here the comparative results in a tabular form, representing the proportions and colours, studied and followed up in different degrees of elevation:—

Dimensions.	*Parus palustris* on the plains and mountains, from 300 m. to 1110 m.	*Parus alpestris* on the Oberland, from 1110 m. to 1800 m.	*Parus borealis* on the Haute Engadine, from 1800 m. to 2200 m.
	millims.	millims.	millims.
Total length	From 116 to 118	From 120 to 124 and 130	From 126 to 128 and 130
Length of wing from the point	61 to 63	65 to 66	65 to 68
Length of tail from vent	52 to 53	57 to 58 or 59	56 to 57, 58 to 59 or 60
Distance from the tip of the wing to the end of the tail	24 to 27	28 to 29	31 to 33 or 34
Length of beak from gape	10 to 11	11·5	12 (even in spring) to 14·5
Length of beak from frontal plumes	7·5 to 8	9	9 to 10, and in spring 11
Breadth of beak across the nostrils	4·5	5	5, and in spring 6
Height of beak at the nostrils	4	4·5	4·5, and in spring 5
Length of tarsus	16 to 16·5	17	17 to 18 to 20
Length of toe with the nail	12·5 to 13·5	14 to 15	15 to 16
First primary	= the eighth or ninth	= the eighth.	About equal to the eighth.
Third and fourth primaries equal and longest.	Third and fourth equal and longest.	Third and fourth equal and longest.	Third and fourth equal and longest.

"There we have the proportions; let us see now in the succeeding tables the styles of coloration compared in spring and autumn, according to these two liveries of the three same Titmice:—

5

"Spring Dress of the Males of the three Titmice.

Parus palustris.	*Parus alpestris.*	*Parus borealis.*
Plains and Mountains.	Oberland.	Haute Engadine.
Feathers of the head or hood extending from the beak to a little below the occiput, deep lustrous black with blue reflections.	Hood coming down to between the shoulders, of a dark blackish brown, with reddish brown reflections.	Hood down to the back, of a blackish brown, a little more pronounced than in *P. alpestris*, and with reflections even still more brown.
Back covered with plumes of a medium length, greyish brown in colour with a tinge of olive.	Back-feathers a little longer than in *P. palustris*, and of a clear ashy brown.	Back-feathers longer than in *P. palustris*, and of an ashy grey colour, very slightly inclining to bluish.
Rump clearer-coloured than the back.	Rump with a few feathers of a rosy grey or nankeen.	Rump altogether rosy white, and decidedly brighter.
Scapulars of the same colour as the back.	Scapulars blackish in their centre, and having the border of each feather coloured like the back.	Scapulars blackish in the centre, and having the border of each feather coloured like the back.
Wing-coverts olive-brown, bordered with the same colour as the back.	Wing-coverts blackish brown, bordered with the same colour as the back.	Wing-coverts blackish brown, inclining to ashy, and bordered with the grey of the back.
Outer quills or primaries blackish brown, very narrowly edged with whitish on the outer edge.	Primaries blackish brown, bordered with greyish white on their outer web.	Primaries blackish, and bordered with bluish white on the outer web.
Secondaries rather clear blackish brown, tolerably broadly fringed with clear greenish grey on the outer edge.	Secondaries rather clearer blackish brown, and broadly fringed with greyish white on the outer web, the innermost slightly inclining to reddish on the dorsal side.	Secondaries of a rather clearer black, broadly fringed with whitish on the outer side, and a little reddish on the dorsal side.
Tail-feathers of a blackish brown, the outermost fringed with grey, the others with greenish grey or olive.	Tail-feathers blackish, the outermost fringed with whitish, the others bluish grey.	Tail-feathers blackish, and broadly fringed, the outer one with white, and the others with bluish white.
Cheeks white, extending a little on the sides of the neck along the sides of the hood, washed towards their lower half with a faint tinge of grey.	Cheeks and sides of the neck pure white running on each side of the hood down to its extremity, the hindermost plumes very slightly washed with rufous.	Cheeks and sides of the neck perfectly pure white, accompanying the hood right down to the back.
Throat whitish, and exhibiting underneath the beak a spot of deep black; this spot is often a little larger on individuals from the mountains.	Throat from the beak as far as the top and a little on the sides of the breast of a smoky black; many feathers issuing from the middle of the throat slightly bordered with white.	Throat of a fine smoky black, which, widening a little in the form of a shield, extends on the top and sides of the breast; towards the lower part the plumes are bordered with white.
Breast and middle of the belly of a lustrous white, a little inclining to grey; under tail-coverts and flanks of a grey colour, slightly inclining to rufous.	Breast white, belly whitish, slightly washed with nankin in the centre, and gradually tinged with the faintest vinous blush towards the flanks and tail.	Breast and belly white, a little washed with faint nankeen towards the flanks.
Surface of the tail-feathers and quills of an ashy grey.	Surface of the tail-feathers and quills of an ashy grey.	Surface of the tail-feathers and quills of an ashy grey.
Nasal plumes black.	Nasal plumes blackish.	Nasal plumes often rufous.
Beak blackish.	Beak blackish.	Beak blackish.
Tarsus, toes, and nails of a bluish grey or lead-colour.	Tarsus and toes of a greyish brown, slightly glossed with violet; nails greyish brown.	Tarsus and toes greyish brown, faintly glossed with violet; nails greyish brown.
Iris dark brown.	Iris dark brown.	Iris dark brown.

"Autumn Dress of the Males of the Three Titmice.

Parus palustris.	*Parus alpestris.*	*Parus borealis.*
Plains and Mountains.	Oberland.	Haute Engadine.
Hood nearly the same as in spring, but the reflexions perhaps a little brighter.	Hood sooty black, a little glossed with violet reflexions, perhaps a little darker than in spring.	Hood sooty black, a little glossed with brownish violet reflexions; in a word, more pronounced than in spring.
Back slightly more rufous than in spring.	Back covered with long and silky plumes of a more reddish tint than in spring.	Back covered with very long and silky plumes of an ashy grey a little inclining to rufous.
Rump as in spring.	Rump very little clearer than the back.	Rump very little clearer than the back.
Scapulars like the back.	Scapulars blackish in the centre, and broadly bordered with bronzy grey.	Scapulars blackish in the centre, and broadly fringed with ashy grey.
Wing-coverts a little darker than in spring.	Wing-coverts blackish, bordered on their outer side with rufous grey.	Wing-coverts blackish, bordered with the same colour as the back.
Primaries finely bordered with yellowish grey.	Primaries blackish, a little more broadly fringed with whitish than in spring.	Primaries blackish, a little inclining to ashy, and conspicuously bordered with whitish.
Secondaries broadly fringed with olive-grey.	Secondaries blackish, clearer than in spring, and broadly fringed on their outer border with white a little inclining to rufous.	Secondaries very broadly fringed with whitish.

"Autumn Dress of the Males of the Three Titmice" (*continued*).

Parus palustris.	*Parus alpestris.*	*Parus borealis.*
Plains and Mountains.	Oberland.	Haute Engadine.
Tail-feathers almost the same as in spring.	Tail-feathers slightly darker and more broadly bordered than in spring.	Tail-feathers a little more broadly fringed than in spring.
Cheeks white under the eye, but washed lower down with a grey slightly inclining to rufous.	Cheeks white and long, washed on their lower side with a pretty tinge of rosy nankeen, which extends on to the shoulders.	Cheeks and sides of the neck white, and slightly washed with nankeen on their edges and nearly to the shoulders.
Throat with the black spot often smaller than in spring.	Throat with the black spot darker and a little less extended than in spring; some feathers bordered with white.	Throat with the black spot a little less extended than in spring, more deeply coloured and streaked here and there with white.
Breast and middle of the belly of a whitish colour, slightly inclining to rufous; the under tail-coverts and flanks washed with rufous.	Breast white; middle of the belly of a very faint rose-colour; flanks and under tail-coverts of a pretty vinous tint, more pronounced than in spring.	Breast and first half of the middle of the belly white; under tail-coverts and flanks washed with a slight vinous tinge.
Surface of the tail-feathers and quills as in spring.	Surface of the tail-feathers and quills as in spring.	Surface of the tail-feathers and quills as in spring.
Nasal feathers black.	Nasal plumes blackish.	Nasal plumes blackish.
Beak blackish.	Beak blackish.	Beak blackish.
Feet almost the same as in spring.	Tarsus and toes very slightly darker than in spring.	Tarsus and toes very slightly more pronounced than in spring.
Iris dark brown.	Iris dark brown.	Iris dark brown.

"Let us now quit the plain, and, rising on the mountain-side, compare the Marsh-Titmice (*P. palustris*) that we can meet with as high as 1100 or 1200 metres: all present exactly the same proportions and colours; a little more extension of the black spot on the throat alone distinguishes the individuals of the upper from those of the lower parts. But leaving first the gardens, then the various woods, let us enter the forests of conifers; we have scarcely mounted a few feet when already a great change has taken place. We have seen the little dissimilarity that a difference of 800 or 900 metres of snow can effect between the Marsh-Titmose of the plain and that of the mountain; and now a few paces only have sufficed to completely change the facies of birds, who live notwithstanding, at this point, side by side. Our Titmice present all at once proportions passably larger; their tail is of a sudden longer, their beak and feet have acquired more force and extension, their feathers, especially those of the back, have taken larger dimensions. Instead of a little brilliant blue-black hood, we have at one step a hood of blackish brown extending right on to the back; instead of the simple spot on the throat, we have the latter entirely black; we have more elongated cheeks, and the tail-feathers and quills perceptibly bordered with brighter colour; we have no longer the same colour on the feet: in a word, we observe a slight change everywhere.

"Thence let us go a little higher, not omitting to remark that all the proportions are regularly larger and the colour brighter; this is only a gradual increase in the importance of those characters which have already served to distinguish the supposed *P. alpestris* from *P. palustris*; we shall at last, as we continue our ascent, meet with Titmice which it would be impossible not to identify at the first glance with *Parus borealis* of the north. The *Parus borealis* of De Selys does not present any difference in its proportions from the least of the Engadine specimens; the characters drawn from its coloration are only those which the influence of a more northern climate has succeeded in still further exaggerating; its general coloration as well as the borders of its tail-feathers and quills are more pronounced and clearer. The *Parus atricapillus* (Lath.), which only seems to be *P. borealis* of North America, once more repeats exactly the same characters as our *P. alpestris*, only exhibiting them, so to speak, in their extreme intensity. If it is the analogy of the climates which causes the relations which exist between the *P. borealis* of the north and those of the Alps, it cannot any longer be supposed that *P. palustris* is but a form of *P. borealis*, which, submitted to other conditions, had also other characters; for why, then, do we not have gentle transitions from from one to the other according to a continual increase in the altitude and latitude.

"Let us further compare the noteworthy and parallel differences which distinguish the appearance of the

two liveries of *Parus alpestris* and *P. borealis*, with the little difference that *Parus palustris* exhibits in these two states; and we shall soon be led to attach great importance to this simple fact, not only to recognize and identify the first two Titmice, but further to separate the latter specifically. *Parus alpestris*, whose habitat touches that of the Common Marsh-Titmice, does not retire in autumn along with that species to the plain in order to pass the winter; constituted like *P. borealis* to resist the cold, it nests, like that species, in the mountains; but, also like that bird, it dons at its autumn moult very long plumes, silky in texture and differently coloured, which serve to protect it from the cold, and at the same time to distinguish it from the Common Marsh-Titmouse.

"The female of *Parus borealis* much resembles the male in autumn, but differs from him a little in spring by its hood being slightly more brown, by the tint of the upper surface being rather clearer, by its black throat being more striped with white, and, finally, by its cheeks being a little less pure. The young, on leaving the nest, have the general tints of the upper and under surface more sombre and obscure than the adults; the black of the head and throat is less extended and not so pronounced.

"Lastly, as regards the eggs, although I have been enabled to compare examples of our *P. palustris*, as well as those of *P. alpestris* and *P. borealis*, also of *P. borealis* of the north of Europe, not having as yet been able to work upon a sufficiently large number of subjects, I prefer to wait till I have got together a larger series of specimens before I venture to draw characters in this direction; I content myself with remarking here that I have ordinarily found in the eggs of *P. alpestris* and of *P. borealis* the little axis longer, in comparison with the size of the egg, than in *P. palustris*, as well as the form a little rounder."

M. Fatio was so kind as to send us over some of his specimens to illustrate his paper, though he tells us that, in consequence of numerous applications, his series has been reduced considerably. His observations are borne out by the specimens before us; but we must demur to the supposition that a greater seasonal change takes place in *P. borealis* than in *P. palustris*; for in northern Europe the latter bird undergoes perceptible variation in the autumn. In fact, although the memoir of M. Fatio is a great advance towards the better understanding of the European Marsh-Titmice, much still remains to be elucidated with respect to their different changes of plumage. We have seen in Mr. Howard Saunders's collection two specimens of *Parus borealis* from the Basses-Alpes, which do not differ from more northern examples, except in being a little more brown on the head.

P. alpestris much resembles *P. palustris* in general appearance, but is more nearly allied to *P. borealis* by reason of its brown cap, produced to the interscapulary region, and its extended white cheeks. The colour of the back, however, is not quite so clear an ashy grey as the true *P. borealis*; and in autumn there appears to be a little more fulvous tinge on the sides of the neck, but in their summer plumage there seems to be little or no difference. We agree with M. Fatio in considering that this subspecies is not to be specifically distinguished from *P. borealis*. We have a young specimen, received from the Basses-Alpes, and sent to us by M. Fairmaire, of which we append a description.

Young Bird. Above dull ashy-brown, much more dingy than the adult; wing-coverts broadly washed with the same colour as the back, as also are the quills, but the edging to the primaries and outer secondaries is more fulvous and even inclining to whitish; crown of the head dull sooty-black, strongly inclining to brown; sides of the face and neck, which are drawn back so as almost to cut off the black crown from the back, where the former becomes narrower on the hinder neck, whitish with a slight tinge of sandy; throat black, with no whitish edgings; rest of the underparts whitish, inclining to sandy buff on the flanks and greyish on the sides of the upper breast. M. Victor Fatio, in a supplementary note to his former article (Bull. Soc. Orn. Suisse, i. p. 68), writes as follows:—"The feet and tarsus, in the young birds of the year, are of a pretty clear blue-grey, contrasting with those of the adult bird, which has them much darker and less blue. Besides this, the black on the throat extends, even in the young stage, rather low on the breast, and forms, more particularly in the young males, a sort of collar."

Italy. Two specimens, given us by Count Salvadori, belong to the ordinary *P. palustris.* They were both collected in the spring of 1870, and agree with examples from the north of Europe.

Greece. We have in our collection two specimens of the same bird, obtained on Mount Olympus by Dr. Krüper in November 1869. They are consequently in autumn plumage, and are rather darker than the Piedmontese skins just noticed.

Asia Minor. Mr. Robson sends us a single example from Guiken, killed on the 1st of November 1870. It is also referable to *P. palustris,* and agrees precisely with the before-mentioned birds from Greece, being like them in autumn dress.

Siberia. Our collection embraces a single specimen from the southern part of Lake Baikal, where it was procured by Dr. Dybowski on the 18th of March, 1870. It is, as far as we can see, the same as *P. borealis* of Europe, but is rather more mealy in appearance, and has the cap of an extraordinary length, extending nearly halfway down the back. It would, however, be impossible to decide about these differences from our single specimen.

The *résumé* above given will, we trust, solve the doubts of our readers as to the perfect distinctness of the present species from the Common Marsh-Titmouse. Other circumstantial evidence has been published, which will be found in Dr. Bree's Birds of Europe, and will therefore be familiar to all our readers. The history of the present bird, so far as it is at present worked out, tends to prove that *Parus borealis* is a more eastern bird than *P. palustris*, which (unless our supposition be true that *P. baicalensis* of Swinhoe is the same) is not known as an inhabitant of Siberia. Here, however, *P. borealis* is a very common bird; and it is plentiful in Northern Europe, while it occupies a few favoured mountainous localities in other parts of the Continent, having been found in Galicia, and is by no means rare in the Swiss Alps. Here and in Savoy a slightly modified form, *Parus alpestris*, occurs, which we have endeavoured to show, from the elaborate disquisition of M. Fatio, is not to be separated from *P. borealis.*

The present species has not occurred in Northern Europe westward of Norway. In his work on the birds of that country, Mr. Collett states that it "breeds commonly in all larger conifer woods, more particularly in those which are in a more elevated position, from the Hvalœer (islands) up to East Finmark, where it is a resident. In Christiansand it is most numerous in the eastern part, but breeds also along the west coast in several of the forests, as well as on the mountains and at Sænd Fjord. On the sides of the fells it often passes above the conifer region, and breeds in the birch region. Its geographical distribution, compared with that of *Parus palustris*, is as yet not sufficiently well known." In a subsequent letter he writes as follows:—"From the borders of Nordland throughout Finmark it quite takes the place of *Parus palustris*, whereas in the south both species are equally numerous, but each keeps to its own especial locality. In the western parts of Norway it is tolerably numerous, both in conifer and non-evergreen growth." Nilsson states that in Sweden it is chiefly a northern bird, but has latterly extended its range southward. Professor Sundevall says that from 61° N. lat. it quite takes the place of *P. palustris*; though the receipt of several specimens from the neighbourhood of Stockholm shows that both species occur in the neighbourhood of that town. Wheelwright found it plentiful at Quickjock, in Lapland; and Von Wright records it as the commonest Titmouse in Finland. Continuing its northern range, Dr. von Middendorff says respecting this bird, "I observed it on the Jenesei up to near Turuchánsk. In the Stanowoi Mountains, on the Udá, and on the Schantár Islands it was very common, and the only common bird of this family.

In the end of October it was to be seen in Mantchuria, on the southern slope of the boundary mountains. I did not find this Titmouse in the Stanowoi Mountains earlier than on the Aldán—that is, at the first appearance on the coast of the conifer woods which are peculiar to the Sea of Ochotsk." Dr. G. Radde remarks that this and the Long-tailed Titmouse are found in the same localities, but the one or other always predominates. "Late in September 1856, on the islands of the Onon, I found quantities of the latter and a few of this species, which abounded in the birch-woods near the village of Birki, about forty versts N.E. of these islands, where again the Long-tailed Titmouse was rare. In the Bureja Mountains I heard the *Parus borealis* twitter, and observed them to be getting uneasy, though they remained together some time. On the 4th of March I heard the first call-note, which appeared to differ from that of the Baikal Marsh-Titmouse. It was then full winter, and at 7 A.M. the thermometer stood at 20° R. On the 15th they were again calling loudly. In the eastern Sajan they commenced singing much later, as I only heard them calling on the 19th of April, 1859. In the Bureja Mountains they were migrating from the 15th of August to the end of September." Dr. L. von Schrenck says that "it is common in the Amoor. I saw it from the mouth of the Amoor to the Ussuri, and on this river to the mouth of the Noor at all seasons of the year. At the Nikolaievsk post it was particularly common in autumn and winter in small flocks or pairs in the birch- or other woods skirting the conifers. In the winter I found it common on Saghalien, at both coasts and in the interior of the island, on the mainland coasts, on the Lower Amoor, and at Gorin, in the thin woods of larch trees, birches, willows, and alder bushes. In July 1854 I shot it in the Bay of Hadshi, in a high but open fir-wood. Specimens procured at the mouth of the Ussuri on the 3rd (15th) of August and on the 30th of September (12th of October) at the Nikolaievsk post were moulting; and those shot at the latter place on the 4th of November (new style) and later had moulted altogether."

Count Wodzicky observed it in the winter of 1852 in Eastern Galicia; and an Austrian-killed example is, as our friend Herr von Pelzeln kindly informs us, in the collection at Vienna, and on comparison agrees precisely with specimens from Stockholm. Bailly writes that this species is "sedentary in Savoy, and during the summer season frequents the conifer forests, especially those on the mountains. It has been observed near Chambéry, on Mount Grenier, Alpétaz, Jorguy, and Nivolet, in Banges, at Margériaz, Rozannaz, and at the foot of Mount Tréloz. It also occurs in some of the higher parts of the Tarantaise, especially at Allues and Notre-Dame-du-Pré, throughout the Haute-Maurienne, especially near Modane Termignon, and Lanslebourg, on the southern slope of Mount Cenis, near Ferrière, and Mollaret, &c. &c. M. Caire found it on the Basses-Alpes, and especially near Barcelonette, where it is sedentary. In the Swiss Alps it is also found throughout the year."

Von Nordmann remarks that at the foot of the mountains of Ghouriel, in Southern Russia, he met with a bird whose note differed from that of the Common Marsh-Titmouse; and as he seems to know *P. lugubris*, which is also included in his book, there may be a chance that *P. borealis* wanders into these localities.

For an account of the habits of this species and its ally, *P. alpestris*, we are again indebted to the memoir of M. Fatio:—"The Alpine Marsh-Titmouse, as well as the northern form, inhabits in Switzerland the forests of fir trees, pines, and larches; it goes in families, and is easily

recognized by its call-note, which is exactly the same from 1100 to 2200 metres altitude; it repeats, in fact, everywhere, once or twice in succession and in a vigorous tone, either the note *tzi kraee*, or simply *kraee kraee*, always making the *ae* very hard and long. In spring I have also heard in Engadine, at a height of 2200 metres, the male of *P. borealis* produce, besides some little hissings, the gentle warblings that Bailly attributes to *P. alpestris*.

"The nesting-time varies, probably according to the elevation and season of the year. Thus, in 1863, *P. borealis*, in its form of *P. alpestris*, was feeding its young in a nest in the Oberland Bernois, at a height of 1100 metres, in the early part of June; the same year *P. borealis* was also feeding its young in the nest in the forests of Haute Engadine, at a height of 2100 metres, at the end of the same month. In 1864 *P. borealis* was only making its nest in Engadine in the beginning of June; I have just seen it enlarging with its beak a hole in a larch, which seems the result of quite recent labour; it applies to its task astonishing zeal, continually coming out and throwing to the bottom of the tree a quantity of débris. Does this Titmouse sometimes hew its own hole for the reception of its nest, when by chance it does not succeed in finding one ready made? or rather does it confine itself to arranging after this fashion the hole which it finds? I cannot as yet answer these questions with certainty; but I must remark, however, that plenty of individuals that I have killed in the nesting-season were completely bare (that is to say, had no feathers) on the forehead; perhaps this is caused by the rubbing off of the feathers during the work of excavating the hole performed with an instrument comparatively too short for the purpose. I must observe, moreover, that I have found, especially in Engadine*, many examples furnished in spring with a beak clearly much stouter than that of individuals captured in the autumn: can this be the wear and tear of the beak in the work of boring? This seems very anomalous; but I shall probably be able a little later to support this statement by analogous observations made on other birds; the fact remains, however, that I have found in spring many specimens furnished with beaks similar to that of *Parus bicolor*.

"When once the young ones are hatched, our Titmouse further loses, like many other species, the feathers of the throat in the task of feeding them; it is consequently very difficult to procure a bird in breeding-plumage after the month of May. I once killed in Engadine, towards the middle of June, a Northern Titmouse in which all the underparts were completely washed with a fine tint of deep rose-colour; this tint, which diminished a little on being washed, was evidently of vegetable origin, and was probably caused by the branch on which the bird had slept, or by the hole in which it had taken refuge."

In the 'Ornithologie de la Savoie' (iii. p. 71) Bailly gives a capital account of the habits of his *Parus alpestris*:—"It has the same mode of life as the Coal Titmouse, whose society it further seeks singly; it possesses also the activity and extreme agility of that species; but its call-note and love-song are different. Like that bird it hunts all its life long, jumping along branches, or climbing up them by means of little sharp flappings of the wings; like it also, the present

* If the Northern Marsh-Titmouse itself hews its own nest-hole when it does not meet with one already made, one can easily conceive that it must be under this necessity more often in Engadine than in the Bernese Oberland; for, instead of the tender firs inhabited by a crowd of wood-boring birds of the latter place, it can find in the first-named nothing but larches &c., of so much harder a nature that very few Woodpeckers bore for it.

bird hangs, or balances itself at the tip of little branches or young shoots of the fir trees, or clings tightly to the trunk of a tree or the crevices of the bark, so as to gain an easy position for capturing the prey it meets with; lastly, like the Coal Titmouse, it feeds on kernels or seeds of green trees, bushes, and alpine plants, with berries or little wild fruits, insects, flies, large gnats, butterflies' and spiders' eggs, ants, larvæ, caterpillars, and butterflies.

"After the nesting-season is over, or rather after the bringing up of the young, it is rarely seen alone. It lives then in families until the approach of winter, and forms little bands which traverse without intermission all day the woods of pines, firs, and larches; it is especially on the outskirts of these woods, or on the trees encircling the glades, that they are to be noticed. But as soon as they have visited them in every part, they bury themselves for a few moments in the depth of the woods, whence their call-note, which is very different from that of all their congeners, discovers them every instant. From its cry, which is heavy, rather drawn out, and even a little trembling, it seems that this Titmouse utters a syllable *crê*, repeated three or four times in succession, at equal intervals, and in the same tone; but another and more rapid syllable sometimes precedes it. It is in this way pronounced *tit-crê*, *crê*, *crê*, *crê*, the vowel *ê* being always long.

"It often happens that these little companies grow extraordinarily large from one instant to another, as they join other families of their own species or Crested Titmice, and especially of Coal Titmice, or still more those of Goldcrests, or Creepers. All these little fliers, thus assembled, frequent in common and in the most perfect agreement the accessible parts of the woods of their district; they disperse afterwards in families or little troops as they enter the thicker parts of the woods. . . . . .

"This Titmouse remains attached to the district where it was once hatched. The winter does not succeed in driving them away; but the young birds especially descend every year from our mountains during the rigour of the cold season, to stay a short time in the evergreen woods of the small hills and mountains which crown the plains. It does not migrate from Savoy, like most of its congeners, at the approach of the bad season. In winter it prefers to live in pairs, male and female, or from three to five individuals together, rather than in such numerous bands as in the autumn. Its flesh then contracts in many of our mountains a taste of resin, which doubtless proceeds from the consumption it makes of seeds and fresh shoots of evergreens.

"It is about the end of April that the Alpine Titmouse in Savoy takes to the act of reproduction. Some couples, however, especially those which have not ceased to inhabit the highest forests of our Alps, do not proceed to the work of love before the first days of May, when the snow commences to leave these heights; these nest about the 20th of this month, and have but one brood. The others, which breed sooner than those from the less elevated regions, make two nests a year, one about the end of April or the beginning of May, the other towards the 20th or 30th of June. The male and female construct their nest in the small natural holes of trees, situated sometimes in the trunks, sometimes in the vertical or even the horizontal branches of fir trees, and more especially of larches. They compose it outwardly of slips of grass, mosses, and lichens, which they pile up thickly at the base of the cavity; afterwards they furnish the interior with hair, feathers, wool, and thistle-down. From six to nine eggs, very rarely ten, are the result of their amours. . . . . The young ones are hatched on the fifteenth or sixteenth day of

incubation. From the next day the father and mother do not cease to bring, as their chief food, flies, gnats, ants' eggs, and very small caterpillars. They feed them also, during the first ten days after their leaving the nest, and they stay with them until they can feed themselves.

"The male, besides his ordinary cry, which is also peculiar to the female during all seasons, possesses from the end of the winter till the autumn moult a very characteristic song, and one which does not resemble any of the warblings of the other Titmice. It is rather of a hissing nature, and is uttered sometimes precipitately, sometimes gently. In the first case the bird expresses the syllables *tu*, *tu*, *tu*, *tu*, *tu*, *tu*, in two different tones; in the second he seems to pronounce the words *thuiz*, *thuiz*, *thuiz*, three or four times, at equal distances, and on the same note. He has besides, during the love-season, a very feeble warble, so feeble that one hears it only from the foot of the tree whence he is uttering it, but very significant and inimitable; he only gives vent to this in the very height of his passion."

Eggs of this bird in Dresser's collection, procured in Sweden and Finland, do not differ from those of *Parus palustris*. Dr. Rey writes us that the average size of eight eggs in his possession, from Sweden, is 16 by 12·4 millims. The eggs were laid about the 12th of May.

The descriptions of the male and female are from Swedish specimens in Lord Lilford's collection, in full breeding-plumage. The lower figure in the Plate represents *P. borealis*, the upper figures *P. palustris*, the right-hand bird being the dark English race.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a. Djurgården, Stockholm, January 24th, 1864 (*C. J. Sundevall*). *b, c, d, e*, ♂. Stockholm, October 2nd, 1870, August 3rd and October 9th, and January 25th, 1872. *f, juv.* Basses Alpes, 1869 (*Fairmaire*). *g*, ♂. Savoy, May 11th (*Bailly*). *h*, ♂. Lake Baikal, March 18th, 1870 (*Dr. Dybowski*).

E Mus. Salvin and Godman.

a, b, ♂, ♀. Sarpsborg, Norway, June and July 1866 (*Baker*).

E Mus. E. R. Alston.

a, ♀. Vossevangen, Norway, May 24th, 1871 (*J. A. Harvie Brown*). *b*, ♀?. Vossevangen, May 24th, 1871 (*E. R. A.*)

E Mus. Fielden and Harvie Brown.

a, b. Vossevangen, Norway, May 22nd and 23rd, 1871 (*J. A. H. B*). *c*. Vossevangen, May 23rd, 1871 (*E. R. Alston*).

E Mus. Victor Fatio.

a, b (*P. palustris*). Bernese Oberland, 2500–3200 feet, September 1863 (*V. F.*). *c, d* (*P. alpestris*). Bernese Oberland, 4000 feet, June 1863 and October 1862 (*V. F.*). *e* (*P. borealis*). Haute Engadine, June 1863 (*V. F.*).



J G Keulemans, lith

M & N Hanhart imp

SIBERIAN MARSH-TITMOUSE.

PARUS CAMTSCHATKENSIS.

PARUS CAMTSCHATKENSIS.

(SIBERIAN MARSH-TITMOUSE.)

Pœcila kamtschatkensis, Bp. Consp. Gen. Av. i. p. 230 (1850).
Parus borealis, Middend. Reise in d. N. u. O. Sibiriens, ii. p. 155 (1851, nec Selys).
Parus palustris, var. *borealis*, Schrenck, Reis. im Amurlande, i. p. 307 (1860, nec Selys).
Pœcile baicalensis, Swinhoe, Ann. & Mag. Nat. Hist. vii. p. 257 (1871).

Figura nulla.

Ad. P. boreali similis, sed nigro pilei usque ad dorsum extenso, dorso pallidiore et grisescentiore, capitis et dorsi lateribus circa pileum niveis, remigibus secundariis griseo-albo marginatis, caudâ longiore.

Adult (Ust Zylma). Differs from *Parus borealis* in having the black cap very much more developed, extending down to the centre of the back; the back is paler and greyer; the sides of the head below the cap, and a broad band bordering the cap right down to the end, pure white; secondaries broadly margined with greyish white; tail as in *Parus borealis*, but rather longer. Total length about 5·25 inches, culmen 0·43, wing 2·52, tail 2·6, tarsus 0·68.

When writing the article on *Parus borealis*, together with Mr. R. B. Sharpe, in August 1872, we were unable to decide as to the specific distinctness of the present bird, as we possessed but a single specimen from Lake Baikal; but since then I have had an opportunity of examining a larger number of specimens, and have convinced myself beyond doubt that the eastern bird constitutes a fairly distinct species, differing quite as much and as constantly from *Parus borealis* as that species does from *Parus palustris*. Furthermore, thanks to the researches made by Messrs. Seebohm and Harvie-Brown in North-east Russia, I have ascertained that the Siberian Marsh-Tit is certainly a resident species within the Western Palæarctic Region. Its range extends from the Petchora river eastward throughout Siberia to Kamtschatka. Messrs. Seebohm and Harvie-Brown met with it at Ust Zylma on their arrival there in April, when it was still full winter, and I am indebted to the latter of these gentlemen for the following notes:—

"During our stay at Archangel in March and beginning of April we shot two or three specimens of the Northern Marsh-Tit (*Parus borealis*, De Selys). They were frequenting the spruce firs on an island near Archangel at the time they were shot; and south of Archangel we found this Marsh-Tit not uncommon at the edges of the pine-woods as we travelled by sledge from Vologda. Of the distribution of *Parus borealis* to the eastward we cannot speak with any certainty, as we do not find any records in our journals of the occurrence of any species of Titmouse during our rapid sledge-journey between Archangel and Ust Zylma.

"We met with the Siberian Marsh-Titmouse, however, in small numbers, amongst the alder- and birch-woods near Ust Zylma, and at Habariki, in April and the beginning of May, but did not see them after the snow disappeared, or meet with them again to the northward of the last-named locality.

"Of their habits there is little to record, these being, as far as we had opportunity of judging, similar to those of *Parus borealis*. At that season (end of winter, April and beginning of May) they appeared to haunt the birch-woods in preference to the pine-regions, finding, no doubt, better feeding amongst the decayed stumps and loose bark of the first-named growth. They were very silent, and almost always intent upon the search for their food, and were seen in pairs on most of the occasions on which we met with them."

Having now ascertained that the present species is distinct from *Parus borealis*, all the notes respecting the occurrence of this species in Asia, published in the article on *Parus borealis*, are referable to the present species, and not to true *P. borealis*; for both Von Middendorff and Schrenck give short descriptions of the birds obtained by them which leave no doubt that the specimens obtained by them are true *P. camtschatkensis*. This latter species is found as far east as Hakodadi, in Japan, whence I have two specimens from the collection of Mr. Swinhoe, and am thus able to state that his *Parus baikalensis* is referable to *P. camtschatkensis*, his type from Lake Baikal being identical with the other specimens of this species which I have examined. Having also examined the other Titmice from China in the collection of Mr. Swinhoe, I find (curiously enough) that the Marsh-Titmouse which inhabits that country is *Parus borealis*; but the specimens in Mr. Swinhoe's collection, four in number, all from Pekin, do not belong to the most decided form of that species; they more resemble specimens obtained from localities in Europe where *Parus palustris* meets *Parus borealis*, though, at the same time, I have no hesitation in referring them to the latter species. These specimens are labelled by Mr. Swinhoe *Parus kamtschatkensis*; thus the species referred to by him (P. Z. S. 1871, p. 362) under this name is undoubtedly *Parus borealis*, and not the present species. From this it is clear that *Parus borealis* has a far wider range to the east than was at first supposed, and that it has in Eastern Asia a more southern range than in Europe, being replaced to the north by *Parus camtschatkensis*.

In habits the present species does not appear to differ from *Parus borealis*; and I have no definite data respecting its nidification, in which it doubtless also agrees with that species.

The specimen figured is an adult male from the Petchora.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Ust Zylma, N. Russia, May 10th, 1875. *b*, ♂. Lake Baikal, March 18th, 1870 (*Dr. Dybowski*).

E. Mus. R. Swinhoe.

a, ♀. Lake Baikal, October 9th, 1870. *b*, ♂. Lake Baikal, November 3rd, 1870 (*Dr. Dybowski*, types of *P. baicalensis*). *c*. Hakodadi, Japan. *d*, ♂. Hakodadi, November 22nd, 1865 (*Whitely*).

E Mus. Feilden & Harvie-Brown.

a, ♀. Ust Zylma, May 15th, 1875.

E Mus. H. Seebohm.

a, ♀. Ust Zylma, April 28th, 1875. *b*, ♂, *c*, ♂. Ust Zylma, May 15th & 18th (*Seebohm & Harvie-Brown*).



SOMBRE TITMOUSE.
PARUS LUGUBRIS
85

PARUS LUGUBRIS.

(SOMBRE TITMOUSE.)

Parus lugubris, "Natterer," Temm. Man. d'Orn. i. p. 294 (1820).
Pœcila lugubris, Bonap. Consp. Gen. Av. i. p. 230 (1850).
Penthestes lugubris, Reich. Av. Syst. Nat. *Trepidatores*, pl. lxii. (1850).
Pœcila lugens, Brehm, Naumannia, 1856, p. 369.
Pœcile lugubris, Degl. & Gerbe, Orn. Eur. p. 569 (1867).
Poikilis lugubris, Blasius, List of B. of Eur. p. 8 (1862).

Trauermeise, German.

Figuræ notabiles.

Werner, Atlas, *Granivores*, pl. 13; Naum. Vög. Deutschl. xiii. Taf. 379, fig. 1; Gould, B. of Eur. iii. pl. 151. fig. 1; Bree, B. of Eur. iii., Frontispiece; Fritsch, Vög. Eur. tab. 21. fig. 17; Dubois, Ois. Eur. pl. 80.

♂ *ad. æstiv.* pileo summo saturatè fuliginoso-nigro: facie laterali albidâ, usque ad latera colli productâ, ubique brunneo tinctâ: genis imis et gutture circumscripto nigris: dorso toto cinerascenti-brunneo, tectricibu alarum concoloribus, harum marginibus angustissimè pallidiùs marginatis: alâ spuriâ nigricante: remigibus brunneis, intùs ad basin albis, extùs angustè albo limbatis, secundariis latiùs marginatis, intimis dorsi colore lavatis: caudâ brunneâ, vix cinereo lavatâ, pennis extùs angustè albo marginatis: subtùs albicans, pectoris superioris lateribus cinerascentibus: rostro et pedibus plumbeis: iride brunneâ.

♂ *hiem.* similis ptilosi æstivæ sed obscurior: suprà olivascenti-brunneus, pileo etiam olivaceo lavato: subtùs sordidè albus: gutturis nigredine olivaceo obscuratâ.

♀ *æstiv.* similis mari adulto sed pallidior et pileo guttureque brunnescentibus vix nigricantibus.

♀ *hiem.* similis ptilosi æstivæ, sed obscurior, plumis fuscescente marginatis.

♂ *juv.* similis mari adulto sed multò pallidior, pileo vix quàm dorsum saturatiore: dorsi plumarum scapis angustè albidis: tectricibus alarum majoribus albido terminatis: gutture toto cinerascente, et corpore reliquo subtùs albo cineraceo lavato.

Adult Male in breeding-plumage. Crown of the head, including the upper margin of the ear-coverts, deep sooty black, extending a little way down on to the nape; upper surface of the body ashy brown, the least wing-coverts of the same colour; the greater coverts a little darker, and narrowly edged with whitish, the primary coverts and bastard wing very dark brown, almost black, with narrow whitish edgings; quills greyish brown, the inner web white at the base, the primaries narrowly, and the secondaries more broadly edged with white, the innermost secondaries being washed with the same colour as the back; tail clear greyish brown, with white edgings, the shafts blackish brown above, whitish underneath; sides of the face and neck whitish, the latter slightly washed with ashy brown; lower margin of the cheeks and entire throat deep sooty black; rest of the under surface of the body

white, the upper part of the breast ashy brown on the sides, and a slight shade of the same colour tinging the sides of the body; bill and feet lead-colour; iris dark brown. Total length 5·5 inches, culmen 0·5, wing 2·8, tail 2·5, tarsus 0·75.

Adult Female. In general colours resembling the adult male, but the crown and head brownish. It appears to be a little larger than the male. Total length 6 inches, culmen 0·5, wing 2·9, tail 2·65, tarsus 0·8.

Winter plumage. In both sexes the colours are more obscure than in summer, all the feathers being edged with dusky olive-brown, the head and throat strongly washed with this colour, as are also the white parts of the plumage more or less; the whitish edgings to the wing-coverts are much broader, and tinged with fulvous. The summer plumage is gained by the gradual wearing off of these edges.

Young Male. Very much paler than the adult either in winter or summer, the head scarcely darker, and the back exhibiting distinct whitish shaft-lines to the feathers; sides of the face and underparts of the body dull white shaded with ashy brown; throat dull greyish brown, with whitish shaft-lines, very much paler than in the adults; greater wing-coverts tipped with white.

Explanation of the Plate. The birds figured have all been procured in Greece and Asia Minor by Dr. Krüper, and are at present in our own collection: they represent the adult male and female, and the young male, the latter being the left-hand figure. Our descriptions are taken from the same birds.

The Sombre Titmouse is entirely a bird of South-eastern Europe, extending westward as far as Hungary and Illyria, and southwards to Palestine. Its chief home seems to be Greece, whence it ranges into Southern Russia.

The original specimens of this bird were obtained by the late Johann Natterer in Illyria; and examples of his collecting are still preserved in the Vienna Museum. In Hungary Herr Zelebor procured specimens in the Banat.

Von der Mühle says it "arrives late in Greece, in the Morea towards the end of April or early in May, and inhabits the small valleys where wild prune- and other fruit-trees abound, never being found on the higher ones. Each pair has its regular district, which it visits daily. It is a shy, timid bird, and difficult to approach when followed. I never observed them later than the early part of September." Lindermayer observes, "I can state with certainty that this Titmouse is a resident in Northern Greece, as I have shot it during the winter, and have obtained eggs and young in April and May from the neighbourhood of Athens. It lives a solitary life in pairs, and never congregates in larger numbers, like the other Titmice, although in its habits it resembles them. It climbs and hops from one branch to the other, continually uttering its call-note *stzi*, *stzi*, *terrerr*, hunting carefully after food in the crannies of the bark of the olive-trees; it makes its nest in the holes of these trees, depositing seven or eight eggs of a pure white spotted with red. It breeds also in the north of Greece, in Acarnania, and on Parnassus." Messrs. Elwes and Buckley state that "one specimen was shot, and others seen, on the banks of the Bistritza, in Macedonia;" and Dr. Krüper has procured many specimens in the same district. He writes to us as follows:—"It is not rare in the plains of Greece; and I also found it in Asia Minor and Macedonia. On Olympus I met with it, tolerably high up on the mountain. It breeds twice in the year, building in holes in trees, sometimes high up and sometimes low down.

I observed a pair on Olympus, which probably had their nest in a hole in the rocks, as there were no trees in the neighbourhood. This Titmouse does not appear to lay as many eggs as other species. I found eggs in Attica, and this year one nest, containing young birds, which was placed in a hollow olive-tree in the churchyard at Narlikevi. This species can easily be distinguished from other Titmice by its note."

In the well-known work on the ornithology of Southern Russia, Professor von Nordmann says that it inhabits the southern parts of the Black Sea. During his travels in Palestine Canon Tristram procured the present species in the Lebanon only.

Dr. E. Rey tells us that he possesses three eggs of this species from Macedonia and Asia Minor, which average in size 17 by 13·75 millimetres. In Dresser's collection is one egg, collected by Dr. Krüper in Greece, which measures $\frac{28}{40}$ by $\frac{22}{40}$ inch, is pure white, spotted with bright red, similar in colour to the markings on eggs of *Parus major*, and the spots are chiefly collected in a zone round the larger end.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, b, ♂ *ad.,* ♂ *juv.* Smyrna, June 22nd and July 8th, 1871 (*Dr. Krüper*). *c,* ♂ *ad.* Ætolia, January 28th, 1869 (*Dr. Krüper*). *d,* ♀ *ad.* Acarnania, February 7th, 1869 (*Dr. Krüper*). *e, f.* Mount Olympus, Macedonia, September 12th and November 13th, 1869 (*Dr. Krüper*).

E Mus. H. B. Tristram.

a. Russia (*Eversmann*). *b.* Lebanon (*H. B. T.*).

E Mus. Salvin and Godman.

a, b, ♂, ♀. Mount Olympus, Macedonia, October 10th, 1869 (*Dr. Krüper*).

E Mus. T. E. Buckley.

a. Macedonia, March 1869 (*T. E. B.*).



SCANDINAVIAN TITMOUSE

PARUS CINCTUS

PARUS CINCTUS.

(SIBERIAN MARSH-TITMOUSE.)

La mésange de Sibérie, Montb. Pl. Enl. vi. 708, fig. 3.
Parus cinctus, Bodd. Tabl. Pl. Enl. p. 46 (1783, ex Montbeillard).
Siberian Titmouse, Lath. Gen. Syn. ii. pt. 2, p. 556 (1783, ex Montb.).
Parus sibiricus, Gm. Syst. Nat. i. p. 1013 (1788, ex Lath.).
Parus lugubris, Zetterst. Resa Sver. och Norr. Lappm. p. 120 (1821, descr. orig. nec Natterer).
Parus lapponicus, Lundahl, Notis Faun. et Flor. Fenn. Förh. Helsingf. 1848, p. 1, pl. 1. fig. 1.
Pœcila sibiricus, Bonap. Consp. Gen. Av. i. p. 230 (1850).
Poikilis sibiricus, Blasius, List of Eur. B. p. 8.

Lappsk mes, Swedish; *Lapintiitinen*, Finnish; *Kada-pija*, Lapp.

Figuræ notabiles.

Montbeillard, Pl. Enl. 708. fig. 3; Bree, B. of Eur. iii. p. 6; Fritsch, Vög. Eur. Taf. 21. fig. 8.

♂ *ad.* pileo et collo postico fuscescenti-brunneis: dorso fulvescenti-brunneo, vix ferrugineo, uropygio concolori: tectricibus alarum minimis et scapularibus dorso concoloribus: tectricibus majoribus grisescentibus pallidè fulvo lavatis: remigibus nigricanti-brunneis, primariis angustè albido marginatis, secundariis latiùs, et pennis intimis dorsalibus fulvo lavatis: caudâ nigricante, griseo lavatâ, rectrice extimâ fulvescenti-albo marginatâ: genis cum regione auriculari et collo toto laterali albis: gutture toto nigricanti-fusco, plumis paucis angustè albo marginatis: pectore summo et centrali albido: corpore reliquo subtus pallidè ferrugineo: subalaribus fulvescenti-albis: rostro nigro: pedibus pallidè violaceis: iride rufescenti-brunneâ.

♀ *juv.* supra fuscescens, minimè fulvescenti tincta: capite cucullato, circumscriptè umbrino vix fulvescente: alis minus distinctè albido marginatis: corpore subtus ut in ave adultâ colorato, sed multò pallidiore, et ptilosi magis lanuginosâ.

Adult male. Crown of the head, extending backwards on to the upper part of the back, dusky brown, a little darker near the eye and along the sides of the head; rest of the back golden brown, slightly inclining to rust-colour; scapulars and wing-coverts uniform with the back, the greater coverts more greyish and edged with the same colour as the back; quills blackish, the primaries externally edged with narrow lines of white, the secondaries more broadly, giving a hoary appearance, the innermost or dorsal secondaries tinged with fulvous; tail black, more or less washed with grey, the outer feather edged and tipped with dull white; entire throat dusky blackish brown, with a few white margins to the feathers of the lower part; chest and centre of the belly whitish; rest of the under surface of the body pale rust-colour; under wing-coverts yellowish white; bill black; feet pale violet; iris reddish brown. Total length 5·2 inches, culmen 0·4, wing 2·8, tail 2·8, tarsus 0·7.

Young. More woolly and not so fluffy as the adult; general colour above paler, slightly more grey in tone, with the least tinge of fulvous on the upper part, but with none of the clear rust-colour of the adult;

the line of the head indicated by an indistinct hood, and not running so far back on the hinder neck; the quills not so plainly edged with white; throat dull black, and the rest of the plumage of the under surface distributed as in the adult, but not nearly so bright.

It is not yet clearly proved how far the present species extends its range to the eastward; and although we have here retained the English name by which it is generally known, we must remark that it has little or no claim to be considered "Siberian," and we shall hope to find that in future works the more appropriate term of "Lapp Titmouse" may be employed when speaking of *Parus cinctus*. Certain it is that our European bird breeds in Lapland, descending southwards in winter; and some notes on its range at this season of the year are given below. For critical remarks as to the species at present included under the heading of *P. cinctus*, we refer our readers to the end of the present article. Commencing with Lapland, its nesting-habitat, we quote the following account of the habits of the present bird, which was contributed by Professor Newton to Dr. Bree's 'Birds of Europe':—"My own opportunities of observing *Parus sibiricus* were not sufficient to enable me to say in what particulars (if in any) its habits differ from those of the other species of the genus with which I am acquainted, beyond the fact that its call-notes are easily recognizable as distinct from any thing else. Indeed, from the information I have at various times received from the late Mr. John Wolley, I should suppose that in manners it closely resembles the rest of the Titmice. It is resident throughout the year in the district around Muonioniska, and, he has often assured me, was the only species which he found to breed there, although in autumn the Marsh-Titmouse makes its appearance, and on one occasion a solitary Great Titmouse was obtained by him. I am unable to give even an outline of the range of *Parus sibiricus* in Lapland; but I do not remember seeing it until, in descending the river Muonio, we had entered the region of the Scotch fir (*Pinus sylvestris*). I never found a nest myself, or saw one *in situ*. It breeds in holes of trees, whether naturally formed by decay, or excavated by Woodpeckers. The nest is a mass of hair, principally from the Lemming, or some of the Voles, but occasionally from the Alpine Hare, mixed with a little green moss, black fibrous lichen, and willow-down. Seven appears to be the usual complement of eggs; but eight, and even nine, are sometimes laid. This Titmouse seems to pay as little regard to the law of priority as some ornithologists do; for several instances occurred, to Mr. Wolley's knowledge, of its dispossessing the Common Redstart from a convenient hole in which the latter bird had begun its nest. The ordinary cry of *Parus sibiricus* is perhaps best expressed by the words 'Pistéé-téé,' pronounced in a hissing tone; and from this cry the bird gets its Finnish name. By those of the people who are inclined to superstition it is regarded as a bird of bad omen; and the squirrel-shooter or bear-hunter looks forward to a luckless expedition if, in starting in the morning, he is greeted by the notes of the busy little Pistee-tianen." Mr. J. H. Gurney, jun., sends us the accompanying extract from two of the late Mr. Wolley's sale-catalogues now in his possession. That of "May 12th, 1857," has this remark:—"*Parus sibiricus* is the only Titmouse at all abundant in Keras Sieppi," and in the one of "May 30th, 1860, he observes that it is "the only Titmouse which breeds in the Muonioniska district."

Pastor Sommerfeldt remarks:—"This lively bird is, with *Fringilla linaria*, one of our true songsters found here in winter. Between the 20th and 23rd of March its call-note may be heard every year at Nyborg. It breeds here and there, having its nest in hollow trees into which

Picus tridactylus or *P. minor* have made an entrance. The nest has a foundation of green moss, and upon that a thick layer of wool, reindeer-hair, and especially Lemming-hair. The eggs, seven to nine in number, are glossy white, with reddish violet and reddish brown spots, often collected at the larger end, and are broad in proportion to their length. They resemble those of the Willow-Wren (*Sylvia trochilus*), but when fresh are not so red, and are more glossy. The spots on the eggs of *S. trochilus* are more numerous, more reddish brown, and distributed over the whole egg. When one has the nest the eggs cannot be mistaken. Mr. Wolley found eggs of *Parus sibiricus* and of the Redstart (*Sylvia phœnicurus*) in the same nest." Mr. Wheelwright also gives the following note in his 'Spring and Summer in Lapland':—"The nest of the Siberian Titmouse was always placed in a stub, the nest built of the blue fur of some species of field-mouse; a very thick wall, but flat, and with a little moss at the bottom outside; the eggs, six or seven, in shape, size, and colour much resembling those of the Crested Tit. The Siberian Tit seems to go to nest later than the *Parus borealis*; for the first nest we obtained was on June the 5th, whereas I found nests of the other as early as May the 20th."

Herr Magnus von Wright says that it occasionally occurs in Finland on its wanderings southward in the winter, but is a true inhabitant of Lapland. Those that have been observed there resemble the Great Titmouse in habits, and frequent the yards about inhabited places, picking up scraps. According to Nilsson it is found in the high north of Scandinavia during the summer, migrating southward as low as Upsala in the winter. In Lapland it is the commonest of the Titmice; and Mr. Löwenhjelm found it from the boundary of Lycksele, Lapland, up to the fells, where it occurred into the birch-region. Professor Sundevall writes as follows:—"In Scandinavia it belongs properly to the conifer forests of Lapland and the sides of the fells, although it may sometimes in summer be found a little below these districts. It is common at Alten (70°), and is found in the same latitude in East Finmark, according to Nordvi, but not at Hammerfest, where the pine-woods cease. Its most southern range is on the Dovre (62°), and perhaps some of the southern fells, but only in the pine-forests above the spruce-growth. In Sweden it is found from 68° to 69° to the neighbourhood of Lycksele, 64° to 65°. But in the autumn and winter it migrates down to Vester Votten and Norrland, and occasionally, though rarely, reaches Upsala and Stockholm, as in the winters of 1838–39 and 1842–43. During the latter winter a small flock even wandered as far down as Bohuslän. The most eastern localities where it has been observed are Enare Lapland, and Kuopio in Finland, where it sometimes comes in the winter. It is unknown as to whether it has been seen on the White Sea or elsewhere in Russia and Western Siberia; but on the Jenesei Middendorff found, near the Polar Circle, a bird so closely resembling the Lapland one, that it must be looked on as the same species, although a variety that can be distinguished. Further eastward it seems that different though allied species occur.

"The Lap-Titmouse affects pine-forests, and is more seldom found amongst alder and birch, and in its habits much resembles the Marsh-Titmice. Like them it is chiefly found amongst scattered large trees, or their young growth. Its general call-note is shorter than that of the *Parus borealis*, and consists partly of a harsh *arrr* or *urrr*, and of a softer *prrêi*. It builds in hollow trees like the others." Mr. Collett gives the following note in his 'Norges fugle':—"Resident in most of the birch- and pine-woods in Finmark. . . . . Found down about

Tromsö and Trondhjem, and common on the southern fells, particularly on the Dovre and Langfjeld, as also on the Hallingdal fells, where it was first observed in 1827 by Professor Lovén. It is most abundant on the upper boundary of the fir-growth on the fells between Gudbrandsdal and Valders, and particularly so at Vaage; in 1863, however, Dr. Printz found it breeding as far down as Odnæs, below 60½°, and scarcely 800 feet above the sea."

As will be seen from the foregoing, this Titmouse inhabits the extreme north of our continent, only ranging somewhat further south when compelled by the severe cold of the arctic regions to seek other and more congenial localities to sustain life. Like all the rest of the Titmice, it is an active, lively, and noisy bird—during the winter season fond of visiting human habitations, and pecking amongst the refuse that has been cast out, in search of any particles of fat that may be found. In its habits it much resembles the Marsh-Titmouse, and when wandering it is often found in company with these. Its note is also very similar to that of this bird, but is louder and much deeper in tone. Its food consists, like that of the Great Titmouse, of insects and, to some extent, of seeds of the various northern plants; and, like the latter bird, it is especially fond of fat. Its Lapp name (*Kada-pija*) means literally hoof-pecker, as when the Lapps slaughter a Reindeer this bird is said to peck in search of fat at the hoofs of the slaughtered beast, which have been thrown out. The above short résumé is taken from Dresser's note-book, and is principally founded on the account of its habits communicated to him by a brother of Magnus von Wright, who was a great sportsman and knew the bird well.

In Dresser's collection are four eggs taken by the late Mr. H. A. Wheelwright near Quickjock, in Lapland. These eggs measure $\frac{26}{40}$ by $\frac{21}{40}$ of an inch, are pure white covered with indistinct light red shell-markings and rich red overlying surface-spots, which are collected chiefly at the larger end.

The following records have reference to the occurrence of the species in Siberia:—Middendorff speaks of a large variety, as big as *P. lugubris*, which he procured on the Jenesei, below the Polar Circle. In April the typical *Parus sibiricus* passed in flocks through the woods between the Amgá and Oldán, but moved on and did not seem to nest in the Stanowoj mountains. Radde only procured one specimen, in August, on the Amoor, and considers it to be one of the rarest of the birds of Eastern Siberia. Schrenck did not meet with it. The Siberian bird to which Von Middendorff refers is not identically the same as the European species; and Von Wright, who first observed this fact, proposed to call the latter by Lundahl's name of *P. lapponicus*, believing (doubtless from its designation) that the true *P. sibiricus* of Gmelin was the Siberian species. Whether the European bird ever occurs in Siberia has yet to be determined; but there can be no doubt of its being the species figured by Montbeillard in the 'Planches Enluminées' (pl. 708); and as both Boddaert's and Gmelin's titles were founded on this plate, Von Wright's name must be added as a synonym of *P. cinctus* of the first-named author. Respecting the eastern form, Professor Sundevall writes as follows:—"*Parus sibiricus, forma major*, ad Jeniseam sub circ. polari" (Midd. *l. c.*), differs from the Lapland bird merely by being a little paler in coloration, and by the paler rufous tinge on the sides of the body. The difference in the length of the wing and tail referred to by Middendorff (62 millims. and 72 millims.) does not appear in a specimen brought back by that author, and procured for our Museum from St. Petersburg. In this bird the wing measures 68 millims., and the tail 69 millims. The other

Siberian form, "*P. sibiricus*, forma typica, inter Amga et Aldan, 16 Apr. (Sibir. Orient. 60° lat.)," by Middendorff (*l. c.*) is said to be exactly similar in colour to the former "without reddish brown on the sides of the body," but much less in size. "Wing 55 millims., tail 65 millims." To this latter form doubtless belongs *Parus cinereus lenensis*, "vertice fusco," which, Pallas (Zoogr. i. p. 558, nota sub *P. palustri*) states, was seen by Gmelin, senior, on the Lena river, not far from where Middendorff found it more than one hundred years afterwards. Further to the eastward, at Ochotsk and Kamschatka, this bird is replaced by another species with a brown (not a black) head, *Parus rufescens*, Audubon,=*P. ferrugineus* (Lundahl, *l. c.* fig. opt.), which is also found in the north-western part of North America. It is richer-coloured, has the back and sides of the body dark reddish brown, and is less in size. "Wing 62 to 68, tail about 52 millims."

We happen to have in our collection an example of a Titmouse from the southern part of Lake Baikal, which formed part of a series of specimens sent to our friend M. Jules Verreaux by Dr. Taczanowsky; and all these specimens agreed *inter se*, and were not the same as *P. cinctus* of Europe. They differ in being clearer grey, with the head almost uniform with the back, the white on the neck and breast much purer, and far less rusty on the flanks; the wing and outer tail-feathers are also more plainly edged with white. In fact this species, which we propose to call *Parus grisescens*, seems to bear the same relation to *P. sibiricus* that *P. borealis* does to *P. palustris*, and we feel confident that further research will result in the discovery of differences in the habitats and economy of the two species. *P. grisescens* is doubtless the bird procured near Peking by Père David, unless, indeed, the small form of *P. sibiricus* referred to above by Professor Sundevall is the bird intended.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a. Quickjock, Lapland (*A. Dahlberg*). *b*. Ropathjera, Sweden (*Meves*). *c*. Norway (*Collett*). *d*. Southern part of Lake Baikal (type of *P. grisescens*).

E Mus. H. B. Tristram.

a. Siberia (*Verreaux*).



1. & 2. BLUE TITMOUSE.
PARUS CÆRULEUS
3. ULTRAMARINE TITMOUSE.
PARUS TENERIFFÆ

PARUS CÆRULEUS.

(BLUE TITMOUSE.)

Parus cæruleus, Linn. Syst. Nat. i. p. 341 (1766).
Cyanistes cæruleus, Kaup, Natürl. Syst. p. 99 (1829).
Parus cærulescens, Brehm, Vög. Deutschl. p. 463 (1831).

Tom-tit, *Nun*, *Blue-cap*, *Hickmall*, *Billybiter*, English (*Selby*); *Mésange bleue*, French; *Cinciarella*, Italian; *Herrerillo*, Spanish; *Blaumeise*, German; *de Pimpel*, Dutch; *Blaameise*, *Blaakop*, Danish; *Blåmes*, Swedish; *Blaameise*, Norwegian; *Sinitiitinen*, Finnish; *Sikoramodra*, Polish; *Sinitza Lazarewka*, Russian.

Figuræ notabiles.

Naum. Vög. Deutschl. iv. Taf. 95. figs. 1, 2; Gould, B. of Eur. iii. pl. 154; Yarr. Brit. B. i. p. 330; Kjærb. Orn. Dan. Afb. xxiii. fig. 4; Schl. Vog. Nederl. pl. 126; Sundev. Svensk. Fogl. pl. xvi. fig. 1; Fritsch, Vög. Europa's, tab. 17. fig. 20; Gould, B. Gr. Br. part 2; Keulem. Onze Vogel, 14.

♂ *æstiv.* pileo summo et collo toto postico lætè cyaneis, hôc paullò saturatiore: lineâ a basi maxillæ per oculum usque ad collum posticum ductâ nigrâ cyaneo nitente: fasciâ pileum circumeunte, facie laterali totâ et collo imo, albis, hôc posticè flavo tincto: dorso toto flavicanti-viridi, uropygio magis flavicante: tectricibus alarum cyaneis, majoribus albo terminatis, ut et tectricibus primariorum: remigibus nigricantibus, extùs cyaneo marginatis, primariis versus apicem albo limbatis, secundariis intimis viridi marginatis et albo terminatis: caudâ sordidè cyaneâ, subtùs pallidiore, rectrice extimâ extùs albo marginatâ: subtùs citrinus, gulâ et plagâ longitudinali per medium pectus nigris, hac cyaneo tinctâ: subalaribus pallidè citrinis: rostro nigricante: pedibus plumbeis: iride saturatè brunneâ, vix nigricante.

♀ vix a mari distinguenda.

♂ *hiem.* ptilosi æstivæ simillimus, sed gulâ nigrâ albo marginatâ et rectrice extimâ latiùs albo limbatâ.

Juv. olivaceo-viridis, pileo summo et collo postico saturatioribus, nigricantibus: cinctu capitali, facie laterali et plagâ nuchali citrinis nec albis: remigibus griseis, flavido terminatis, subtùs lætè citrinus, gulâ imâ fuscescente: rostro corneo, commissurâ flavicante.

Adult male in summer. Crown of the head bright cobalt-blue; forehead white, as well as a line of feathers extending right round the blue crown; back of the neck dark blue, drawn down on each side and meeting underneath the throat; a line of blue-black feathers from the base of the upper mandible to the hinder neck, enclosing the eye and separating the white eyebrow from the cheeks; the latter, as well as a patch of feathers on the hinder part of the neck, white, the latter shading into yellow on the lower part of the patch; back yellowish green, shading into yellow on the rump; wing-coverts deep cobalt, the greater and primary coverts tipped with white; quills blackish, outwardly washed with blue, the primaries edged with white, the inner secondaries with greenish, the dorsal secondaries marked at the

tip with a large spot of white; tail blue above, grey underneath, the outermost feather slightly margined with white; throat black; rest of the under surface of the body lemon-yellow, excepting a bluish line of feathers down the centre of the breast; under wing- and tail-coverts paler yellow; beak blackish; feet bluish grey; iris dark brown, nearly black. Total length 4·5 inches, culmen 0·4, wing 2·6, tail 2·1, tarsus 0·7.

Female. Similar to the male.

Winter plumage. In winter the colours are exactly the same as in summer, but the general plumage is more fluffy. The throat is edged with white, and the white edging to the outer tail-feather is broader.

Nestling. Much darker than the adults, and more olive-green in colour on the upper surface of the body; the centre of the crown and back of the neck greenish black; the line of feathers encircling the crown, as well as the cheeks and the patch on the hinder part of the neck, pale yellowish; wing-coverts greyish blue, the greater ones tipped with yellowish white; under surface of the body bright lemon-yellow, with a slight tinge of greenish on the flanks; the throat also yellow, with a blackish shade on the lower portion of it; bill horn-brown, yellow along the gape; legs lead-coloured.

Another specimen, a little older, has the lower part of the throat more strongly marked with greyish.

Obs. The specimens described above are from the Continent. English birds are always rather more dingy in colour, while the Spanish examples are always brighter than those from any other part of Europe. This fact has probably given rise to the suggestion that they might prove to be *P. teneriffæ*. The last-named bird, however, is quite a distinct species, with a grey back and dark ultramarine-blue crown, whereas the Spanish birds have green backs, but the blue colouring is always richer in hue.

The present species is strictly an inhabitant of Europe proper, where it is generally distributed. Sabanaeff states that it is not found eastwards beyond the Ural; and in Northern Africa it is replaced by the allied species, *P. teneriffæ*.

Throughout Great Britain and Ireland it is a common bird, breeding, according to Mr. A. G. More, as far north as Sutherlandshire and Caithness. Mr. R. Collett writes that it "breeds tolerably commonly in all the lower portions of Norway, about as high up as Nordland. Sommerfeldt the elder found it in Finmark. It is possibly most abundant in the coast-regions and in some localities, as for instance round about Christiania, where it is almost as common as *Parus palustris*." Nilsson states that it is not uncommon in Southern and Central Sweden, but, on the other hand, is rarer in Norway, and not found at all in the northern part of the peninsula. At Gothenburg and Carlstad it is common at all seasons of the year. M. von Wright says that it appears to leave Finland in the winter, though it is not uncommon in the south in the spring and autumn, but that nothing is known as to the localities where it breeds in that part of the country. He further says, in a footnote, that it may occasionally winter there, as a specimen was procured near Helsingfors early in March 1859. Meyer also records it as migratory in Livonia. In Denmark it is common, according to Kjærbölling. In Germany, as stated by Naumann, it is in most localities one of the commonest birds. It is partly a migrant, partly a straggler, or else resident. Borggreve observes that it is migratory all over Northern Germany, common in the western portion. Kræner writes that it is "resident in the mountains and plains of Alsace and the Vosges. It lives in the forests of beech, oak, and other trees, frequenting in winter the gardens and orchards." All over the Low Countries, as well as the whole of France,

it is common, and resident. Bailly says that it is "sedentary in Savoy, though not so numerous as the other species." Doderlein states that it is extremely abundant in the province of Modena, breeding in the wooded hills, and descending to the plains in autumn as soon as the cold weather begins. He adds that in Sicily it is resident throughout the year, being abundant in the olive-plantations &c. during winter, and ascending to the wooded districts on the approach of warm weather, although some remain to breed in the Villa Favorita, near Palermo. In Sardinia it is common, and resident. Lord Lilford states that it is very abundant and breeds in Spain generally—being more common in winter in the southern part of the country, according to Major Irby. The latter gentleman writes to us as follows:—"Very common, particularly in the cork wood of Almoraima, nesting in the holes and in the decayed branches of the cork-trees. I did not observe this species on the African side of the Straits, where it appears to be replaced by *P. teneriffæ*." It is also common in Portugal, according to Professor Barboza du Bocage. Von Homeyer states that it occurs in the Balæaric isles. Regarding its supposed occurrence in Malta, Mr. C. A. Wright says that Dr. Gulia was evidently mistaken in stating, in his remarks on the natural history of this island, that this bird arrives there in great numbers during the spring migration.

Lord Lilford found the Blue Titmouse common and resident in Corfu and Epirus; and Lindermayer says that large numbers winter in the southern provinces of Greece, returning in the spring to the wooded mountains in the north to breed. Mr. Robson writes to us from Ortakeuy:—"This species is generally distributed and a constant resident in European and Asiatic Turkey, is abundant and more numerous than the Great Titmouse. It is also found in cities and villages, where it builds its nest in holes of walls, old trees, &c. and is often seen in gardens actively engaged in searching the branches and trunks of trees for insects. It is most numerous in woods where the alder, hazel, and oak abound, and is but seldom seen in bare mountain-districts, except where a moderate proportion of wood exists; they congregate in winter, and travel over wide areas in search of insect food." Von Nordmann says it is found in the Caucasus, in Volhynia, and in Podolia, and is occasionally seen, during migration, in the gardens near Odessa. Mrs. Strickland kindly informs us that in the Strickland collection is a specimen of the present species obtained by her late husband in Anatolia. Dr. Royland remarks that it is "common in the wooded districts near the village of Havancore, in Asia Minor." Messrs. Dickson and Ross procured it at Erzeroom, where it was "noticed from the 17th of February to the 7th of April. Some were seen at Tortoone in February." During his journey in Persia Defilippi found it nesting in gardens at Kazvin.

Respecting the habits of this Titmouse in Germany we cannot do better than translate the following extracts from Naumann's most excellent work:—"It is to some extent a true migrant, partly a straggler, and partly a resident. In the early summer it lives in pairs, afterwards in families; and in the autumn they collect in large flocks, but seldom in such numbers as the Coal Titmice. The latter half of September and the early part of October is their true time of migration, and then large numbers may be seen on some days journeying quickly from east to west. They travel in the daytime, especially in the forenoon, and sometimes as late as one or two o'clock in the afternoon. They follow along the course of the woods, bushes, and rows of trees, working to the south and west as far as they can, and one can see how much they dislike to pass through open spaces. The whole restless flock hop about the branches of the last tree,

calling incessantly, and show all signs of indecision: single ones fly off, intending to proceed; but when they see that the rest refuse to follow, they return, and others again try a start, until at last the whole company set off. . . . . If they have to pass over any extent of open ground, they rise so high that they are scarcely visible, and call continually. In March they return again to the north, but are not so abundant as in the autumn. Many, however, are only partial migrants or wanderers. These are found in the late autumn and winter until the spring, straggling about the woods and gardens in small flocks. Some pairs are true residents, only moving about daily after food, and are seen every day in the same district. These are found in company with Gold-Crests and Creepers, sometimes with Nuthatches and Coal Titmice, seldom consorting with other *Paridæ*. Amongst wandering flocks of Long-tailed and other Titmice, single birds of the present species sometimes occur, and also in company with Siskins; but they do not fly with the latter, as these little Finches fly too swiftly for them to keep pace."

"Clinging to the walls in our gardens," writes Mr. Stevenson, "the Blue Titmouse digs out the larvæ from their holes and corners; and when he does scatter the blossoms from the fruit-trees, a still greater evil has been lurking at the base of the bud. Surely, then, none but the surliest old gardener would grudge him a taste of the fruit or other dainties he has so helped to preserve, or look otherwise than leniently on such peccadilloes; and even the most obstinate of that opinionated race need but dissect the next victim of his folly to know that he has killed a friend. In winter when his more natural food runs scarce, hardly any thing comes amiss; and many a time has he afforded me a fund of amusement when picking a bone, especially fixed to a stake in the garden for his and my gratification. How he raises his little crest, and flutters his wings, when he first discovers the tempting feast; now hovering around or clinging to the sides, as some scrap of meat comes handy to his bill, or perched for an instant on the broken shank, he makes one laugh outright at his comical expression, as with head on one side he seems to speculate on the chances of reaching the marrow still remaining in the shaft. In one very severe winter, when many of our resident birds were completely starved, I remember seeing a pair of Blue Tits following a cart-load of turnips along the road, settling upon and pecking at the roots, for the purpose, no doubt, of extracting maggots from the wart-like excrescences on their surface. It has been remarked also by Messrs. Sheppard and Whitear that this species in winter frequents, for the same purpose, the sheds in which turnips are kept and where they are sliced up for the use of the cattle."

Mr. Thompson observes:—"In addition to the more common haunts, this bird is met with as far up the sides of the mountain glens as there is a little underwood for shelter. It feeds pretty much on the highways, and occasionally builds in the walls of town gardens. In winter, whether mild or otherwise, this species is very partial to the reeds (*Arundo phragmitis*) fringing the river Lagan, near Belfast, where I have often been much interested in observing numbers of them. The force of one coming against a dead reed sways it almost to the surface of the water in which the base is immersed; but the Titmouse nevertheless maintains its hold—then, hurrying to another, alights near its base and rapidly runs up the stem to near the top, and almost dips in the river again; the graceful bend of the reed adds much to the beauty of such a scene."

Mr. A. Benzon, of Copenhagen, writes to us as follows:—"The peasantry here generally call it *Blaakop*, on account of its blue head. After the Great Titmouse, it is the commonest of

our Titmice in the woods and parks, where it builds in holes of trees, but also makes use of other suitable places, such as holes in walls, building a nest like *Parus major*, but with less moss and more feathers. It sits very close; and I once on Bornholm took away a stone in a wall above its nest, sent the bird off, and counted its thirteen eggs, let it return again, and then replaced the stone, without the bird forsaking her home. A few days after, I poked in a straw, and she only grumbled, uttering a harsh note. On the 9th of May 1869, at Dyrehaven, I took eleven eggs out of a nest, and on the 11th of June I found young birds in the same nest. It lays more than one egg per diem; for when collecting with my friends Erichsen, Theobald, and Fischer on the 12th of May 1868, we found a nest containing one egg, and on the 18th of May we again examined it and found it to contain ten eggs; thus it had laid ten eggs in seven days.

"As before stated, I found a nest on Bornholm with thirteen eggs; but here at Dyrehaven they generally lay from eight to eleven; and in a full sitting, some are partially incubated."

The Blue Titmouse is chiefly, nay almost entirely, insectivorous, and, instead of being included amongst the victims of members of sparrow-clubs, as is too often the case, should enjoy total immunity; for few birds are more useful in ridding the garden of insect pests. Respecting the nature of its food the well-known naturalist, Mr. F. Bond, sends us the following note:—"According to my experience, the Blue Titmouse feeds its young very much with small larvæ of the gooseberry-moth (*Abraxas grossulariata*), as also of the winter moth (*Cheimatobia brumata*), Aphides, and other insects; in the autumn I have known it to damage ripe pears by pecking round the stalks. Late in the autumn and in the winter it feeds largely on the eggs of insects, spiders, &c. &c. I have seen it in company with the Great Titmouse, Coal Titmouse, and sometimes the Marsh-Titmouse picking off the loose bark from felled elm trees in search of the grub or larvæ of the elm-beetle (*Scolytus destructor*) and other wood-boring insects. I do not know for certain that they feed on the young larvæ of the yellow-tailed moth (*Porthesia chrysorrhœa*), but believe such to be the case. They are, as I dare say you know, fond of picking a bone. Early in the spring they seem very fond of searching for food among the grass under hedges. I have also seen this species, as well as the Coal and Marsh Titmice, very busy extracting the fat maggot from the round galls that are now so common on stunted oak-trees." To give some idea of the usefulness of this pretty little Titmouse, we quote the following observations communicated by Mr. Weir to Macgillivray's 'British Birds':—"On Tuesday morning, the 4th of July 1837, at a quarter past two o'clock, I went out to observe the Titmice feeding their brood. It was a most delightful and calm summer morning. It is then, and only then, that we can form any conception of our British songsters; for then only they pour forth their notes with redoubled vigour. With their melody the whole air seemed to resound. About a quarter past four o'clock this music, so enchanting, gradually died away, and all was again mute. In life, however, our pleasures are often intermixed with pain; for the midges, those poisonous little insects, gave me much annoyance. At half-past three o'clock in the morning the birds began to feed their young, which were six in number. From that time until four o'clock they fed them twelve times, and from four to five o'clock twenty-five times; from five to six o'clock they fed them forty times, which was astonishing, as, during the whole of this hour, they flew to a plantation at the distance of more than one hundred and fifty yards from their nest; from six to seven o'clock they fed them twenty-nine times. During a part of this hour they flew in every

minute. From seven to eight o'clock they fed them twenty times. During this hour it rained very heavily. From eight to nine o'clock they fed them thirty-six times, and from nine to ten o'clock forty-six times. During a part of this last hour they fed them twelve times in five minutes. From ten to eleven o'clock they fed them thirty-seven times, from eleven to twelve o'clock thirty-nine times, and from twelve to one o'clock twenty-four times; from one to two o'clock they fed them twenty-three times, from two to three o'clock thirty-four times, and from three to four o'clock eighteen times; from four to five o'clock they fed them twenty-nine times, from five to six o'clock twenty-five times, from six to seven o'clock twenty times, and from seven to half-past eight o'clock twenty-five times. They now stopped, after having been almost incessantly engaged for seventeen hours in their labours of love, and after having fed their young 482 times. They appeared to feed them solely with caterpillars; sometimes they brought in a single large one, and at other times two or three small ones; it is therefore impossible to say how many had been carried in by them during the day."

The accompanying paragraph is extracted from Mr. Stevenson's 'Birds of Norfolk.' "The following facts as to a most singular nesting-place of this species I can vouch for from personal observations:—In the spring of 1857, a pair of Blue Tits built their nest in the interior of a door-post forming part of the back entrance to a house, a short distance from Norwich. On the inner side of the door-post was the usual brass plate, with three square openings for the lock, sneck, and bolt to shoot backwards and forwards in. Through the largest of these, the woodwork being rotted away, the birds obtained access to their strange nesting-place. The materials were carried in bit by bit, regardless of the constant passing to and fro of the servants; and their presence was intimated by a loud hiss whenever a finger or stick was intruded into their domicile. The most singular thing, however, was the fact that the door, though open during the day, was always locked at night, thus shutting in these little tenants, without a chance of escape, until morning, the lock itself filling up the only possible exit. The nest appeared to be placed about six inches below the entrance to it; but how supported, could not be seen; and in this place, in spite of every drawback, these little creatures managed to hatch and bring off their young ones in perfect safety."

Mr. J. H. Gurney, jun., writes to us:—"A white variety was observed in January 1848 at Northrepps, near Cromer. My father has a yellow one from Saffron Walden. All the others which were in the nest were the same colour; and this happened two years in succession. A similar specimen was shot at Inverness, and recorded in 'The Field.'"

Yarrell says, "The eggs are variable in number, sometimes very numerous. Montagu mentions six or seven; Pennant names from twelve to fourteen; Mr. Heysham has also found fourteen eggs in a nest; and Mr. Hewitson has recorded one instance in which the nest contained eighteen eggs. From eight to ten eggs, however, is the more common number; they are white, spotted with pale red, measuring seven lines and a half in length, and six lines in diameter."

Dr. E. Rey, of Halle, writes us word that "the average size of forty-four eggs he has measured is 15·4 by 11·9 millimetres, the largest measuring 17 by 20, and the smallest 14·25 by 11·75 millimetres respectively. In Germany the fresh eggs are found from the 20th of April to the 6th of May, and the full complement of eggs is from seven to twelve. In Algarve (South Portugal) I found it breeding, but not common."

The birds described are all in our own collection, the summer plumage being taken from a Piedmontese skin given us by Count Salvadori, and the winter plumage from a German specimen obtained from Mr. W. Schlüter, of Halle. The young birds are from England.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a–j. Near London (*C. R. Davy*). *k.* Purley, near Reading (*C. Howlett*). *l*, ♀. Leiden, Holland, October 21st, 1870 (*Sala*). *g*, ♂. Halle, March 1870 (*W. Schlüter*). *h.* Cassel, November 6th, 1867 (*W. Schlüter*). *i, j, k.* Piedmont, March and April 1870 (*T. Salvadori*). *l.* Near Gibraltar, March 3rd, 1870 (*L. H. Irby*).

E Mus. W. Schlüter.

a, ♂. Germany.

E Mus. Lord Lilford.

a, ♀. Lilford, Northants, February 1870 (*L.*). *b*, ♂. Algesiras, Spain, January 1870 (*L. H. Irby*).

E Mus. H. B. Tristram.

a. Castle Eden, Durham (*H. B. T.*).

E Mus. J. H. Gurney, jun.

a, nestling. Norfolk, June 1870 (*Gunn*). *b*, ♂. Catton, Norfolk, January 6th, 1866 (*J. H. G.*). *c.* Wolsingham, Durham (*J. H. G.*). *d, e.* Greatham (*J. H. G.*). *f, g.* Castle Eden (*J. H. G.*).

PARUS TENERIFFÆ.

(ULTRAMARINE TITMOUSE.)

Parus teneriffæ, Less. Traité d'Orn. i. p. 456 (1831).
Parus ultramarinus, Bonap. Rev. Zool. 1841, p. 146.
Parus cæruleanus, Malh. Rev. Zool. 1842, p. 46.
Cyanistes ultramarinus, Bonap. Consp. Av. i. p. 229 (1850).
Parus violaceus, Bolle, J. f. O. 1854, p. 455.

Bou reziza of the Arabs (*Loche*).

Figuræ notabiles.

Gray and Mitch. Gen. of B. pl. 52; Loche, Expl. Scient. de l'Algérie, Ois. pl. 7. fig. 1.

♂ *ad.* pileo nigro, cyaneo nitente: collo postico et laterali, fasciâ oculum pereunte, et gulâ totâ ad collum posticum conjunctâ indigotico-nigris: fronte et lineâ superciliari pileum circumeunte, cum genis, albis: dorso clarè schistaceo, uropygio vix viridescente: tectricibus alarum cæruleis, majoribus angustè albo terminatis: remigibus nigris externè cæruleo lavatis, primariis albo marginatis, et secundariis albo angustè terminatis: rectricibus cæruleis, scapis nigris: subtùs citrinus, hypochondriis paullò viridescentibus, pectore medio indigotico-nigro: rostro nigro: pedibus plumbescenti-cinereis.

♀ haud a mari distinguenda.

Adult Male. Above clear slaty blue; crown of the head deep blue-black, the fore part much brighter blue; forehead, a line over the eye encircling the head, cheeks, and ear-coverts white; throat deep blue-black, running below the cheeks on each side and joining a collar which goes round the neck, and a narrow line drawn through the eye to this collar, of the same colour; wing-coverts blue, the greater ones with scarcely perceptible white tips; quills brownish black, exteriorly washed with blue like the back, the secondaries especially being almost entirely of this colour, and also tipped conspicuously with white; tail blue, a little brighter on the upper surface, the shafts black above, yellowish beneath; under surface of the body lemon-yellow, a narrow bluish-black line extending down the centre of the breast, the flanks rather more greenish; bill black; feet leaden blue. Total length 4 inches, wing 2·4, tail 1·8, tarsus 0·6.

Adult Female. Similar to the male, the black of the throat in one example before us being less deep.

Obs. The above descriptions are taken from a male example procured in Teneriffe by Mr. F. Du Cane Godman, on the 9th of April 1871. Dr. Bolle has named the birds from the Canaries *P. violaceus*, having reason to believe that it was not the same as *P. ultramarinus* of Algeria, with which, however, he allows *P. teneriffæ* of Lesson to be synonymous. We do not quite see any valid reason for the proposal of this name, because if a species allied to *P. ultramarinus* occurred in the Canaries, *P. teneriffæ* would undoubtedly be the bird, and by proposing a new name for his Titmouse, Dr. Bolle hints at the possibility of two species occurring in the Canaries, a very improbable coincidence. More recently, however, Mr. Godman has brought back three specimens of the Ultramarine Titmouse from this locality, which agree well with Lesson's description of *P. teneriffæ* and also clearly demonstrate that

P. violaceus of Bolle is synonymous. On comparison with Algerian examples there is one difference which is noticeable; and that is the almost entire absence of the white tips to the greater wing-coverts and secondaries in the insular birds: this is a character strongly developed in specimens from Algeria and Tangiers, and if proved to be constant would be almost sufficient to separate them specifically. As, however, none of the Teneriffe specimens are entirely without white edgings to these feathers, though they are very feebly developed in all three birds obtained by Mr. Godman, we must await the inspection of a larger series before deciding on the specific distinctness of the two birds. *Parus teneriffæ* being the oldest name of the species, we have described Canarian specimens.

Comparison with the Blue Titmouse. The whole tone of coloration, when compared with that of the Blue Titmouse, is darker and richer; and the grey back and intense blue of the crown of the head readily distinguish it at a glance.

This pretty little species takes the place of the Common Blue Titmouse on the southern shores of the Mediterranean, but it does not possess nearly so extended a range as its well-known congeners. As at present determined, it is only an inhabitant of Algeria and Morocco, but, as above demonstrated, it also occurs in the Canaries. In Algeria, it has been sent from the province of Bône by Ledoux; and Loche procured it in the neighbourhood of Milianah; while Mr. Gurney has obtained it near Algiers, and Mr. Salvin found it abundant in the Eastern Atlas. In Tangier and Eastern Morocco, Mr. C. F. Tyrwhitt Drake only met with a few examples. Major Irby, however, tells us that he found it plentiful in suitable localities in the neighbourhood of Tangiers.

Dr. L. Taczanowski writes to us that "it is very common in Algeria, where it is met with everywhere on the coast, in the mountains, and the oasis of the desert, being in general much more numerous than the other two species found in that country. In its habits it resembles *Parus cæruleus*, and, like this species, approaches habitations, spending most of its time examining the branches and leaves of trees and bushes. Its note is very different from that of the Blue Titmouse of Europe." Mr. Osbert Salvin remarks as follows:—"This highly coloured representative of our Common Blue Tit (*Parus cæruleus*) is abundant in all the wooded districts in the Eastern Atlas. In the mountains it may not unfrequently be observed about the shrubby vegetation which clothes many of the precipices. In its habits, as might be expected, it much resembles our familiar species." "The Blue-backed Titmouse," writes the late Captain Loche, "affects woods, orchards, and gardens. Notwithstanding its small size, it is a stout and courageous bird; its petulancy is extreme, and its mood extremely quarrelsome: its tastes are carnivorous; and it kills and devours such birds as it is able to master, even attacking individuals of its own species which are weak or ill. Its food, like that of its congeners, consists of insects, small fruits, berries, and grain; it does not shun the neighbourhood of habitations, and often on trees close to them it may be seen sporting, preening its feathers in the sun, and eagerly ferreting among the branches in search of insects and their larvæ. It builds in the holes of trees, and makes its nest of soft substances which it piles together; the number of eggs is from six to eight, of a white colour, marked with little points and spots of brick-red, their dimensions are 16 by 12 millimetres. It is seldom one sees more than two or three individuals of this species together. In captivity the Blue-backed Titmouse flourishes well, and becomes very tame; but if one has the misfortune to place it in the aviary with other birds, its ferocity induces the most sanguinary combats."

In Dresser's collection are a couple of eggs of this Titmouse obtained from Algeria, where they were procured by the late Captain Loche. In size they measure $\frac{26}{40}$ by $\frac{20}{40}$ inch, and in colour and markings resemble eggs of *Parus cæruleus*, but are more thickly blotched with red, and the markings are bolder. Mr. A. Benzon, of Copenhagen, also tells us that he has an egg from Loche measuring 17 by 13 millimetres, which resembles an egg of the Great Titmouse in miniature.

Our descriptions are taken from a pair of adults procured by Mr. Godman at Orotava, in Teneriffe, on the 9th and 10th of April 1871. The specimen figured is a bird from Tunis, for which we are indebted to Mr. E. Fairmaire.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a. Tunis, 1868 (*E. Fairmaire*). *b*. Algiers, 1870 (*J. H. Gurney*).

E Mus. Salvin and Godman.

a, *b*, ♂. Souk Harras, Algeria, April 1857 (*O. Salvin*). *b*, *c*, ♂, ♀. Orotava, April 9th and 10th, 1871 (*F. Godman*). *c*. Teneriffe, April 1871 (*F. Godman*).

E Mus. H. B. Tristram.

a, *b*, ♂, ♀. Forest of Boghar, Algeria, May 30th, 1856 (*H. B. T.*). *c*, ♀. Algiers, May 2nd, 1856 (*H. B. T.*).

E Mus. J. H. Gurney, jun.

a, *b*, ♀. Algiers, February 2nd and 3rd, 1870 (*J. H. G.*).

E Mus. Lord Lilford.

a. Batna (*Verreaux*).



AZURE TITMOUSE.

PARUS CYANEUS

88

PARUS CYANUS.

(AZURE TITMOUSE.)

Parus cyanus, Pall. N. Comm. Acad. Sci. Imp. Petrop. xiv. p. 588, tab. 13. fig. 1 (1770).
Parus knjæsiek, Gm. Syst. Nat. i. p. 1013 (1788, ex Lepech.).
Parus sæbyensis, Sparrm. Mus. Carls. i. t. 25 (1786).
Cyanistes cyaneus, Kaup, Natürl. Syst. p. 99 (1829).
Parus cyaneus, Schl. Rev. Crit. p. xlvi (1844).
Cyanistes elegans, Brehm, Naumannia, 1855, p. 285.

Goloobaia Lazarevka, Russian.

Figuræ notabiles.

Sparrm. Mus. Carls. tab. 25; Werner, Atlas, Granivores, pl. 15; Naum. Vög. Deutschl. iv. Taf. 95. fig. 3; Vieill. Gal. des Ois. pl. 68; Gould, B. of Eur. iii. pl. 153; Kjærb. Orn. Dan. tab. 24. fig. 2; Bree, B. of Eur. iii. p. 10; Fritsch, Vög. Eur. t. 27. fig. 8; Sundev. Sv. Fogl. pl. 68. fig. 5.

Ad. suprà cyanescenti-cinereus: pileo toto, plagâ nuchali et scapularium apicibus albis, illis in ave vivâ cyaneo nitentibus, in speciminibus farctis vix roseo indutis: lineâ angustâ per oculum ductâ et ad torquem occipitalem versus latera colli dilatatum conjunctâ, sordidè cyaneâ: tectricibus alarum cyaneis, minoribus dorsi colore lavatis, majoribus vividioribus ad apicem latè albis, fasciam alarem latam formantibus: remigibus nigricanti-fuscis, extùs vividè cyaneo lavatis et marginatis, versus apicem gradatim albis, secundariis intùs ferè omninò albis: tectricibus supracaudalibus cyaneis, albo terminatis: rectricibus vividè cyaneis, ad basin fuscis, exterioribus ferè albis, reliquis gradatim albis usque duas medias ad apicem tantùm ipsum albas: subtùs purè albus, pectore medio plagâ cyanescenti-nigrâ notato: rostro nigro: pedibus plumbeis: iride saturatè brunneâ.

Juv. similis adultis, sed pallidior, et coloribus ubique dilutioribus: vertice medio cinereo, capitis lateribus flavicanti-albis: alarum caudæque albedine minùs extensâ: subtùs albidus, flavicante lavatus.

Adult Male. Head snow-white, appearing as if powdered over with blue in life, represented in the skin by a pale pinkish reflection; lores, a ring round the eye, and the feathers covering the nostrils also white; a narrow line of feathers drawn through the eye, passing over the ear-coverts and joining a nuchal band which widens out on each side of the neck, prussian blue; a patch of feathers on the hinder neck white, with the same pinkish reflexion as the crown; back pale bluish grey, the tips of the scapulars and the sides of the rump white; upper tail-coverts prussian blue tipped with white; wing-coverts bluish grey washed with white, the terminal half of the greater coverts white, forming a very broad bar across the wing; quills greyish brown, white at the base of the inner web, the outer web prussian blue for the greater part of its length, white for the remainder, the latter colour occupying the larger half of the external web of the outer primaries and gradually diminishing in extent till it occupies the tips of the secondaries, and on the innermost of these latter quills is spread over the greater part of the feather;

tail very long, bright prussian-blue in colour, the bases of the feathers greyish black, and the shafts black where the blue colour prevails, white where the webs of the feathers are of this colour; outer tail-feathers white, all the rest white towards the apical half of each rectrix, gradually diminishing in extent towards the two centre tail-feathers, where it is only seen in the shape of a white tip of greater or less size; under surface of the body entirely white, with a small patch of bluish black in the centre of the breast; bill blackish; feet leaden gray; iris blackish brown. Total length 5·3 inches, culmen 0·4, wing 2·7, tail 2·7, tarsus 0·65.

Young. Crown of the head greyish, surrounded by a ring of yellowish white feathers; a line of greyish feathers through the eye joining the nape, but not exhibiting any blue lustre, back greyish, with very little of the bluish tint observable on the back of the adult bird, but with no perceptible amount of white on the sides of the rump or upper tail-coverts; wings and tail as in the old bird, but the blue not so bright, and the white scarcely so broadly indicated; under surface of the body yellowish white. Total length 5 inches, culmen 0·4, wing 2·6, tail 2·6, tarsus 0·65.

This species is the most strikingly coloured of all the European Titmice, and is always mentioned by ornithologists as the most beautiful of all the Paridæ found within the limits of our continent. It is more common in Siberia, but is nevertheless sufficiently plentiful in European Russia, whence it wanders occasionally into Eastern Germany.

It has been stated to have occurred at Säby, in Sodermanland, and has on that account been included by Professor Sundevall in his work the 'Birds of Sweden.' Twice it has been noticed in Denmark; for Kjærbölling states that a small flock was seen at Sanderumgaads Have on Fyen; and it has been observed by M. Bouriez near Greena. In his recent work on the distribution of birds in Germany, Borggreve says that according to Gloger it has been procured several times at Breslau; and Naumann thinks he saw it at Anhalt. Dr. Sturm, of Nürnberg, relates, in the 'Journal für Ornithologie' (1854, p. 265), that in December 1852 one of these birds was observed in the Steinbühl garden near that town, but was not shot. A specimen killed in Austria is preserved in the Vienna Museum; and the above-mentioned occurrences seem to mark the most western range of the species in Europe.

In Poland, our friend Dr. L. Taczanowski informs us, it is a very rare straggler; for during the thirty years he has lived there he has only once obtained a specimen, near Lublin, though he knows of two other examples caught near Warsaw—all three having been procured in the autumn. M. Henser, of St. Petersburg, in a letter to our friend, M. Carl Sachse, states that in the spring of the year it is common at St. Petersburg, and is caught with Blue Titmice, Redbreasts, and Blue-throated Warblers, and offered for sale by the bird-catchers in the market. Pallas also mentions its occurrence in the neighbourhood of St. Petersburg. It is found in Southern Russia; for Prof. von Nordmann states that it occurs rarely in winter near Odessa, but is commoner in Bessarabia on the willow-covered shores of the lakes and banks of rivers. According to M. Leonida Sabanaeff the present species is not rare in the Southern Ural; and we have received some beautiful specimens of his collecting, for which we have to thank our friend Dr. Renard, of Moscow. Pallas gives the eastern range of the Azure Titmouse as extending from the Volga throughout the whole of Siberia. Dr. Dybowski has found it nesting on the banks of the river Onon in Eastern Siberia; and some notes of his are given below. Dr. G. Radde states that he "found this species on the shores of the river and islands above the Bureja Mountains, especially amongst the

willows and bird-cherries; they were then paired. Although in the west it is rare and seldom reaches 48° to 50° N. lat., it is essentially a north-eastern species in the Old World. In Eastern Siberia it appears to keep about the large rivers; at least I never met with it in the mountain-woods on Lake Baikal and in the Sajan and Apfel mountains. In the Amoor it extends to the country of the Ussuri, where M. Maximowicz obtained it about halfway up this river. We also found it had not reached its equatorial frontier here in 45° to 46° N. lat. Although found so far to the south on the mainland, it does not occur in Japan."

Dr. L. von Schrenck states that "it is found throughout the Amoor country in the extensive willow thickets fringing the river-banks, and on the numerous swampy islands, where it is not rare. In the Lower Amoor country it was procured by Maximowicz, Maack and myself, from June to November at Kidsi, Maji and Zollazi. On the eastern spur of the Bureja mountains I shot a young unmoulted bird on the 2nd of August, and an old male at Albasin on the Upper Amoor on the 24th of September. One of the most interesting ornithological results obtained during the expedition to Yarkand by Dr. Henderson was the establishment of the southern range of this rare bird. He has given us the following note:—"This beautiful little species was common in August in the tamarisk jungles on the banks of the Arpalak, within fifteen miles of the plains of Yarkand. It had, apparently, been recently breeding, as all the specimens obtained were young birds, one of them being scarcely fully fledged."

Until recently this lovely species was supposed to occur but very rarely west of the Ural; but we are fortunate in being able to give some excellent notes on the occurrence of several examples near Moscow, which have just been published in the 'Journal für Ornithologie' for 1871 (pp. 124–130) by Mr. Th. Lorenz, and which we translate as follows:—"In the autumn of 1869 I purchased an Azure Titmouse, for which I paid four roubles, a price not high for so rare a bird. Two weeks later I was going out shooting (I live fifty versts westward of Moscow) in the middle of November, the snow being seven inches deep. I had left the house and was walking through my garden, which is bounded by tolerably high willow trees and is close to the river, when I suddenly heard an Azure Titmouse call; I pulled out my bird-whistle, answered, and saw, not twenty paces from me, the lovely little bird. I hurriedly fired and brought it down; but it was only winged, and, before I could catch it, it called, and immediately another came flying towards me. I hurried home to fetch my trap-cage and tame bird, and returned to the garden. I had scarcely set it and retired five paces, when the bird came flying towards it, attracted by the call of my decoy. The beauty of its plumage when on the wing can scarcely be described; the lovely white and brilliant blue looked beautiful when contrasted against the snowy back-ground. The bird's movements were exceedingly agile, the white crest was continually raised and depressed, and altogether it appeared to be a more lively and active bird than any of its congeners. The bird was caught while I was close to it, and appeared to exercise none of the caution used by the other Titmice. I had baited with dried ants and one of those live cockroaches which are abundant in Russia. The bird on seeing it immediately tried to seize it, and paid for the attempt with the loss of its freedom. When I had taken it home I offered it dried ants and shelled hemp-seed, which were immediately devoured. When about half-an-hour afterwards I offered it a live cockroach on a feather, it climbed on to the side of the cage, viewed it with hungry eyes, and, to my astonishment, seized and devoured it before my face. All shyness had disappeared, and the bird had soon for-

gotten its freedom, and even in the evenings, when the room was lighted up, was quite tame, and would take a cockroach or mealworm when offered. A week later I hung up the trap-cage well baited, and containing the live bird, in the garden above referred to. I watched it patiently, and listened to every Titmouse-call; plenty of Coal Titmice came; but none entered the trap, though they eagerly devoured the dried ants which were strewn about. At last I heard the call-note of an Azure Titmouse; my bird became restless and called loudly; and I soon saw three of these lovely birds approaching, and though they flew low I recognized them immediately. I had meanwhile approached within fifteen paces of the trap. The first two birds were caught immediately; and I hurried to take them out as fast as I could; for it took some time to do so, through the snow. In the hurry and excitement I had set the trap so badly that when the third bird (a splendid male), which had watched quietly while his comrades were being caught and I was setting the trap, entered the latter, it struck so slowly that he escaped. However, he returned directly and tried to enter at the other side; but unfortunately the other door struck too slowly, and he again escaped, but did not fly away further than five paces. The bird, however, had now become more cautious, and, though it returned to the cage, tried to take the bait without touching the trigger. As, however, the insect was on the ground, this proved a difficult matter, and he tried to secure it without success. At last he entered and took the insect, forgetting all caution; and in trying to return he touched the trigger and was captured immediately. I hurried to bring the prisoners home, placed them in cages, and tried the same experiment with a live cockroach as I did with the first bird I had captured, and with the same success; for they took and devoured the insect. Later I caught four more Azure Titmice at the same place, all of which went into the trap without signs of fear. I soon found that they injured their beaks by their uneasy and restless habits; and two died from these injuries; these I skinned and put into my small collection. I bethought myself of a mode of avoiding this. I had observed that two Azure Titmice which I had placed in the same cage did not quarrel like the other species (such as Coal Titmice or Blue Titmice); so I put all my birds in a large cage, 40 inches high and 28 inches broad, in which I kept two Corella Parrots. These latter were greatly astonished at their new companions, and bit at them repeatedly, but could never touch the nimble little birds. It was a pleasure to observe these lovely Titmice; for they were always on the move, and in this large cage their beautiful plumage showed to great advantage. The Parrots seemed puzzled as the active Titmice flew past them and were never to be caught; but they soon got to be good friends, and a Titmouse would often roost close to a Parrot, the latter never interfering with his small friend. The Titmice remained on excellent terms and never fought over their food, which consisted of shelled hemp-seed and dried ants (not ants' eggs); and when I held out a mealworm or cockroach they would hang on the side of the cage to take the dainty morsel; but as I only produced one insect at once, they would squabble, and the stronger bird would drive the weaker off; and this continued until all were satisfied. Excepting at this time and when they settled down to roost, they never squabbled; but in roosting they all tried to get the highest perch. When each one had got a place, they huddled close together; and when they had, as all these small birds do, settled into a sort of feather-ball shape, they looked most droll; for one could only see the white of the breast, the underparts, and the long blue tail. In the daytime after feeding, when the sun shone on their cage, the males would utter their song, if it may be thus termed; for it is scarcely worthy of the name, as it consists merely of the usual call

accompanied by an indescribable chattering note; it is generally uttered in a low tone, excepting a few call-notes, which are loud. In the spring I surmise that the song is louder; but I cannot state for certain, as I sent them to Berlin in March. The call-note is very varied. When on the wing they continually utter a loud but fine *tirr tirr*, by which they may be distinguished at a considerable distance. When they have settled, they look about them and utter a loud and agreeable *tscherpink tscherpink tscherpink* very quickly in succession, and then a note which closely resembles the well-known *pink pink tschsch* of the Coal Titmouse; but the *pink* is shriller and the last note not so harsh. Another note, a very low *tirr*, appears to me to denote satisfaction; for it is generally uttered when, after feeding, the bird is settled beside its mate. Lastly, they have the note *St St St*, peculiar to all Titmice. They fly low and from bush to bush. The flight consists of a succession of bow-shaped lines, is more powerful than that of the Great Titmouse (which flutters more), and resembles somewhat that of the Wagtail; this is probably owing to its long tail. Amongst the boughs the Azure Titmouse is very active; and if it sits quiet the crest is continually raised and depressed; and I am sure that whoever sees the bird in a wild state will agree with me in saying that it is the most beautiful of all the Titmice. Unfortunately, when in confinement it loses its beauty, inasmuch as the white head, which is, as it were, powdered over with lovely blue, becomes of a yellowish tinge."

Dr. Taczanowski has kindly sent us the accompanying observations on the nesting of the present bird, which had been forwarded to him by Dr. Dybowski:—"This species breeds in holes in old trees, especially willows, rarely in the deserted holes of Woodpeckers. The nest is composed of the fur of the White Hare and Squirrels, with a few pieces of slender grass, and forms a close soft bed fully a centimetre in thickness. All the nests I found were in holes from half a metre to one metre above the ground. They lay ten or eleven eggs, which are larger than those of *Parus cæruleus* and in colour resemble those of *Parus palustris*—except that the red spots are paler, smaller and less numerous, generally collected at the larger end; sometimes these spots are so small and pale as to be almost imperceptible to the eye. In form and size they vary; the measurements of five eggs from different nests are as follows:—18·5 by 12·5, 17·0 by 12·0, 16·5 by 12·5, 16·0 by 11·0, 15·5 by 11·0 millimetres respectively. If the full complement of eggs is not laid, the female when leaving the nest covers them with small dry leaves. Like other Titmice she sits closely, and defends her eggs in the same manner. We found complete sittings between the 20th and 26th of May, the eggs being then fresh; on the 14th of June we found young birds."

Just as this present article was going to press, we were enabled to describe the nest and eggs of this rare species from specimens actually before us, Dresser having, through the kindness of Dr. Renard, of Moscow, received a nest with four eggs, together with four skins of the bird itself, all obtained by Mr. Leonida Sabanäeff in the Southern Ural. The nest now before us is composed of dried green moss intermixed with fine cowhair, and lined with what appears to be White Hare's fur; it is closely interwoven, though rather carelessly built. The eggs are white, spotted, chiefly at the larger end, with dull red, and, compared with a large series of the eggs of the various European Titmice in Dresser's collection, most nearly resemble those of the Blue Titmouse—indeed, when mixed up with them cannot be distinguished. In size they measure $\frac{18}{40}$ by $\frac{25}{40}$, $\frac{19}{40}$ by $\frac{25}{40}$, $\frac{18}{40}$ by $\frac{26}{40}$, $\frac{37}{80}$ by $\frac{51}{80}$ of an inch respectively. According to the particulars sent with them, they were taken by Mr. Sabanäeff on the 29th of May 1869. Mr. Benzon also writes to us:—

"Pastor Theobald has an egg from Russia said to be of this bird, which resembles fine-spotted eggs of *Parus cæruleus*, but is more elongated and almost as large as eggs of the Great Tit-mouse."

The figures in the Plate represent the old and young birds of this beautiful species, taken (as are also the descriptions) from specimens in our own collection from Siberia, the adult male having been given us by our friend Mr. Carl Sachse, the young bird having been procured near Lake Baikal by Dr. Dybowski in May 1869.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a. Siberia (*Carl Sachse*). *b, c, d, e, f,* ♂ *et juv.* Lake Baikal, May and June 1869 and February 2nd 1870 (*Dr. Dybowski*). *g, h, i, j*. Southern Ural, April 6th and 11th, 1869 (*L. Sabanäeff*).

E Mus. H. B. Tristram.

a. Siberia (*Dybowski*).

E. Mus. Howard Saunders.

a. Ural (*Dode*).

Genus LOPHOPHANES.

Parus apud Linnæus, Syst. Nat. i. p. 340 (1766).
Lophophanes, Kaup, Natürl. Syst. p. 92 (1829).

Although closely allied to *Parus*, yet this small group, the members of which are characterized by having a conspicuous crest, may very fairly be separated and made to form a distinct genus. In the Western Palæarctic Region only one species, *Lophophanes cristatus*, is found, where it is resident; but other members of the genus *Lophophanes* inhabit the northern portions of the Indian Region, as well as the Nearctic Region, ranging south into the northern portions of the Neotropical Region.

In habits the members of this genus do not differ from those belonging to the genus *Parus*; and, like them, they feed on insects, seeds, &c., and build in holes in trees, depositing numerous white eggs spotted and slightly blotched with rufous. Occasionally, however, *Lophophanes cristatus* not only takes possession of deserted nests built in the branches of trees, but has been known to construct for itself a nest not unlike that of a Wren.

Lophophanes cristatus, the type of the genus, has the bill strong, somewhat conical, the upper mandible slightly curved towards the tip; nostrils basal, small, round, concealed by reversed bristly feathers; gape without any bristles; feathers on the crown elongated, forming a conspicuous recurved crest; wings moderately short, concave, rounded, first quill short, the second about equal to the eighth; tail moderately long, slightly emarginate; tarsus moderate, covered in front with four plates and three inferior scutellæ; feet strong, claws long, strong, and curved, laterally grooved, and tapering to an acute point; plumage soft, lax, and blended.



LOPHOPHANES CRISTATUS.

II

LOPHOPHANES CRISTATUS.

(CRESTED TITMOUSE.)

Parus cristatus, Linn. Faun. Suec. p. 97 (1761).
Lophophanes cristatus, Kaup, Natürl. Syst. p. 92 (1829).
Parus mitratus, Brehm, Vög. Deutschl. p. 467 (1831).

Mésange huppée, French; *Haubenmeise*, German; *Tofsmes*, Swedish; *Topmeise*, Norwegian; *Capuchino*, Spanish.

L. supra griseo-brunneus, uropygio magis brunnescente: capitis plumis densis, fronte et capitis lateribus albis paullo griseo mixtis: pileo summo conspicue cristato, plumis occipitalibus maxime elongatis, nigris albo marginatis: linea post oculos ducta regionem paroticam marginante, nigra: genis et colli lateribus albis, his dorsum versus nigro circumdatis: gutture toto nigro: subtus albescens, hypochóndriis fulvescentibus: rostro nigro: pedibus plumbeis: iride brunnea.

Head very much crested, the occipital feathers elongated and lanceolate; forehead and sides of the head white, slightly mottled with grey; a line of black extending from the back of the eye and running behind the ear-coverts; feathers of the crown black edged with white; cheeks and sides of the neck pure white, forming a crescent-like demicollar; throat black, widening out on the breast and diverging thence round the neck, encircling the white, and thus forming a circlet of black from the nape to the breast; general colour of the upper surface greyish brown, verging into rufous on the rump; quills and tail darker brown above, greyish underneath; under surface of the body white, tinged with fulvous, which latter colour is deeper on the flanks; bill black; feet lead-colour; iris brown.

Young birds are similar to the adult, but have shorter crests.

The Crested Titmouse is essentially an inhabitant of pine and fir forests, and, except during the season of migration, is never found away from them. Its habitat is extensive, ranging from the Mediterranean far into Northern Scandinavia, and from the extreme west of Europe probably as far to the east as the Ural. Only a few instances are on record of its occurrence in the south of England. In Scotland, however, in particular localities, it is not by any means rare. Mr. J. A. Harvie Brown writes to us as follows:—"I have received the birds from the Spey. Eight birds were sent to Edinburgh by Mr. Macpherson Grant, jun., for preservation, two of which were given to me. This was in March 1864. I know of a second locality on the Spey where they breed, and where I hope to take eggs this year. I have no practical knowledge of the bird's habits, as I have never yet had an opportunity of visiting their breeding-haunts."

Mr. A. G. More (Ibis, 1865, p. 120) says:—

"The Rev. Geo. Gordon tells me that it breeds at Abernethy, on the Spey; and Mr. Dunbar describes it as plentiful in the woods of Castle Grant, in Inverness-shire; Montagu had already seen it from the forest of Glenmoor,—all three localities being situated close together on the confines of the counties of Inverness, Elgin, and perhaps extending to Aberdeenshire and Banff. Further north the bird has been seen on the Findhorn, and it nests regularly in Ross-shire."

Mr. Harry Blake Knox writes to us as follows:—

"Thompson, in his 'Birds of Ireland,' does not include the Crested Tit. There is, however, a fine specimen in the Royal Dublin Society's Irish collection. I have another fine male from co. Wicklow, shot in the autumn of 1869; and specimens are exhibited in the Belfast Museum amongst Irish birds."

In Scandinavia Nilsson states that it is found up to Ångermanland, in Sweden, and in Norway not further than the range of fir-growth on the fells. Collett says it is common near Christiania; and Wheelwright collected numerous specimens in the neighbourhood of Carlstad. According to Von Wright it is plentiful in the interior of Finland, but rare towards the coast; and in this country Dresser has also met with it. In Livonia Meyer states that it is common and sedentary; and in Germany, writes Naumann, wherever conifers are plentiful, there the Crested Titmouse is found. Delafontaine records it as rare in Luxemburg; and it is not very common in Holland. Degland and Gerbe consider it not rare in France, and say that it is abundant in the forests of Mormal and the Basses-Alpes. Jaubert and Lapommeraye state that it breeds commonly in the high parts of Provence, and descends in the winter to the valleys of the Basses-Alpes, Var, and even to the mouths of the Rhone. In Savoy Bailly finds it to be common in the pine-forests on the mountains. In Spain Lord Lilford has shot it himself, in a pine-wood in the Peñas de Oroel, near Saca, in Aragon, in 1867; and several specimens have been sent to us from the vicinity of Gibraltar by Major Irby. In Portugal it is rare. Malherbe includes it in the avifauna of Sicily; and it is also occasionally met with in Italy. Count Salvadori writes to us that it is scarce, only to be found in the Alps, but in winter is not unfrequently caught near Como and Bergamo. Seidensacher and Dresser met with it abundantly in Styria; and Count Casimir Wodzicki says that it inhabits the whole of the Carpathians as high as the forest grows. To the eastward the range of the Crested Titmouse extends, according to Demidoff, to the Caucasus, Volhynia, and Podolia; and Radde found it in the conifer woods in the west of South Russia, where he saw it in such localities near Livadia, full 3000 feet above the level of the sea.

Like its congeners, the Crested Titmouse is a sprightly, restless bird, and in its general habits much resembles our common Blue Titmouse, excepting that it is seldom found away from pine and fir woods. In search of its food it generally keeps to the topmost boughs, where it may be seen flitting from branch to branch, or hanging head downwards, searching in the crannies of the bark for insects, on which it principally subsists. During the winter season it goes in small flocks, and consorts with other species of Titmice, Goldcrests, and little birds whose habits lead them to affect the same situations. In company with these and other Titmice it performs slight migrations annually.

Respecting its habits and distribution in Germany, Naumann writes as follows (Vögel Deutsch. iv. p. 45):—

"It is only found where there are large pine or fir woods, whether this be in mountainous or flat districts, and is there common; but where few conifers are found it is rare, and is never met with where these trees do not occur. It is nowhere as abundant as the Cole and Blue Tits. In our neighbourhood it is common in the pine woods, but rare elsewhere.

"It does not leave us, and is partly a resident and to some extent a wanderer, but not so much of a wanderer as many other birds; for it seldom quits the pine woods, and when it does it

is only to visit another pine growth situated in non-evergreen woods. Its wanderings are most extended in the late autumn and spring; and it is then to be found in small groves of pine or fir trees standing in the open country and miles away from the large forests, and also in large gardens. They hurry uneasily through the non-evergreen woods and fruit-gardens which lie between the pine woods they visit on their wanderings, and are only at ease when in these latter; and they also hurry with greater speed over fields or any treeless tract they have to pass. Often a small flock settles in a small isolated pine wood, remaining there throughout the winter, and wandering through it day after day till the spring, when they return to the large woods to breed. . . . . They inhabit the dense old growth of fir and pine forests where the younger growth has shot up some ten feet or more, frequenting the tops of the trees, but often descending into the lower growth, and, in spring particularly, often going on to the ground. They are found much more seldom in non-evergreen woods than the Cole Tit, with which they often consort, and are, indeed, except during the breeding-season, seldom or never alone, but form family parties with Golden-crested Wrens and Cole Tits, of large dimensions, and are often joined by stray Creepers and Nuthatches, who make the daily excursions with them during winter through the forests as if they all belonged to one family, of which the Crested Tits appear to be the leaders; for all attend to their call-note and follow them wherever they go. I have never seen them in the undergrowth of non-evergreen woods; and when passing through these they frequent only the tops of the highest trees, without looking out for food."

Mr. Robert Collett also remarks on the habits of the Crested Tit in consorting with other small birds during its migration, and says that "Professor Rasch has observed that it is generally the leader of these parties, and that the others obey its call-note, and, further, that the Crested Tit keeps watch, and, when a bird of prey or a man approaches, it always appears to give the alarm first, and its note of warning is observed by the rest, and when it flies off they follow its lead. He further states that it always nests in conifer woods and seldom makes its nest in a non-evergreen tree, generally boring its own hole. He gives the number of eggs as generally five, but sometimes four or six."

Dresser, who has had opportunities of observing this bird in Finland, only met with it on two occasions in Southern Finland during the breeding-season, but did not succeed in finding its nest in that country. In Styria, however, when collecting in company with the late E. Seidensacher, of Cilli, he took two nests, on the 17th April, 1866, not far from the town of Cilli; and from his note-book we extract the following observations:—"After walking some distance we (Seidensacher, myself, and a Croatian servant) got into a rocky and undulating country (though still in the valley) covered with beech, oak, and some few fir and alder trees. Here in a low swampy spot we found a nest of *Lophophanes cristatus* in an old alder tree, placed in what seemed to be an old Woodpecker's hole, not above ten feet from the ground. On tapping the tree with the axe the old bird flew out, and, settling close to me on a low tree, hopped about the branches lamenting loudly the intrusion to which it was being subjected. I could easily have shot it, but did not wish to destroy life needlessly. We plugged the hole up with a little soft moss to keep the eggs from being damaged, and then with a few skilfully administered blows with the axe our man soon cut a hole close to the nest, large enough to admit my hand, and then, as I had never before had the opportunity of taking the eggs of the

Crested Tit, I climbed up and soon had the eggs out. The nest consisted of a foundation of green moss well lined with wool and feathers, was loosely and not very well built, and contained five fresh eggs, one of which was damaged by a chip in cutting out the nest. During the time occupied in taking the nest, and when I was seated at the foot of the tree packing the eggs into my collecting-box, the bird never left the immediate neighbourhood.

"Later in the same day I found another nest, placed in a hole high up in a white beech tree, having noticed the bird slip out as our man tapped the trunk of the tree with his axe. Here the nest-hole was in a branch of the tree so rotten that it could in places be picked away with the fingers; so, as it would not bear any of us, a small boy who had joined us volunteered to take it, and succeeded in doing so in safety. This nest was similar in structure and materials to the former one, and also contained five eggs slightly incubated; thus this number would probably not have been added to. Seidensacher tells me, however, that the full complement is generally from six to eight, though Naumann states that it lays as many as ten eggs.

"After taking this nest Seidensacher and I sat down to rest, whilst our man went off to see a nest of *Picus major*, which the boy said he could show us; and as we were sitting there we observed both the Crested Tits come back to examine their now desolate dwelling-place. One of them went into the hole and carried off a feather, probably to some hole in a tree close by, as she soon returned for another, and, I suppose, was already making arrangements for a fresh habitation."

The eggs out of the first nest above referred to, together with eight others taken also near Cilli by Mr. Seidensacher, and now in the collection of Mr. Dresser, we have lying before us. In length they vary from $\frac{26}{40}$ to $\frac{27}{40}$ of an inch, and in width measure half an inch, and are pure white, spotted all over, and chiefly at the larger end, with bright red. They most resemble eggs of the Marsh Tit, but are more spotted than any of these we have seen. Indeed they are nearly as much spotted as many Creepers' eggs.

Our friend Mr. F. Bond has kindly furnished us with the following extract of a letter to him from Mr. C. Thusnall, of Whittlesford, respecting the nidification of the Crested Titmouse, viz.:—

"I had frequent opportunities of seeing the Crested Tit in a very large Scotch fir plantation on the Carr Bridge Moor, in Morayshire, and I do not recollect seeing any other trees growing there, except a few small birches. The habits of this Tit are exactly the same as those of the Little Bluecap, except that it is not quite so active in its movements. I have generally seen them in the top boughs of the firs; but they frequently come on to the ground, apparently to pick up a seed that may drop from the fir-cones; at any rate you see them fly down, look in the grass, and fly up again immediately. They appear to remain in families, as you seldom see a single one. As a rule they prefer the rotten stem of a fir, about twelve or fourteen feet high (there are scores of such stumps standing in the wood, the wind having broken the trees off at that height), and bore a hole in the tree from two feet to eight feet above the ground. I have also found the nests in old stumps of very large trees within six inches of the ground. Their nidification is therefore more like that of the Cole Tit in that respect. You will wonder at six inches of a large fir tree being left out of the ground; but the Scotch, although a careful race, are very wasteful in their fir trees, as when they cut them down they do not stoop as we do, but merely cut the tree off at from eighteen inches to two feet above the level of the soil."

As we before stated, the Crested Tit is chiefly insectivorous, though, according to several careful observers, it also feeds on small seeds of various trees. It is a most useful bird, as, indeed, are all the Tits, and destroys a large quantity of injurious insects by feeding on their larvæ and eggs, which latter it searches carefully for in the small interstices in the bark of trees. According to Bailly it occasionally feeds on juniper berries, and from them a taste is imparted to its flesh, from which we infer that the natives of the sunny south include such small deer as even the Crested Tit in their list of *gibier*.

Mr. Carl Sachse, of Altenkirchen, in Rhenish Prussia, a most excellent field-naturalist, sends us the following particulars respecting the nidification of this bird:—

"With us it (*Parus cristatus*) nests in deserted Crow, Magpie, or Squirrel nests, as also in mountain-ash trees by the road-side, in hollow oak trees, and such like. I have also found several nests built by the bird itself and placed in juniper bushes, with entrance-hole at the side, exactly resembling those of *Troglodytes europæus*—and also similar ones in pine trees, twenty feet above the ground. I have also found nests in hollow tree stumps near the ground. They have eggs here from the 25th April to 15th May, and breed twice in the year."

It appeared to us so strange that our Crested Tit should affect such a peculiar mode of nidification, that we wrote to Mr. Sachse and asked for some fuller particulars, as, were he not so reliable a naturalist, we should be almost inclined to suppose that some mistake had occurred. He immediately replied as follows:—

"In reply to your inquiry as to whether the note respecting *Parus cristatus* was from personal observation, I may assure you that I only send you notes of observations made by myself personally, and hold it a point of honour not to add any thing; and you may therefore rely on what I tell you.

"I believe that the first nest I found constructed by the Crested Tit itself I discovered on the 5th April, 1867; and it contained five half-incubated eggs. I saw the Tit slip out of the juniper bush, but thought I must have made a mistake so soon as I saw the nest, which exactly resembled that of the Common Wren, except that no feathers were inside, and on the outside more twigs were plaited amongst the moss. The bird soon returned; but still I could not believe it, though the eggs did not resemble those of the Wren, but had many more markings, some of them being in one example brownish black. As I never knew that the Crested Tit nested in such a manner, I sent them to Dr. Baldamus, stating full particulars as to the mode in which the nest was built, &c.; and in reply to my inquiries as to what eggs they were, he replied that they were typical eggs of *Parus cristatus*. The question is, if the Tit had made use of a Wren's nest, or built the nest itself.

"I again found a similar nest in a juniper thicket on the 12th June, 1868, and again another on the 3rd June, 1869, in a pine tree about fifteen feet from the ground, containing half-grown young. I thought it must be a nest of the Long-tailed Tit; but I watched the old birds bringing food for the space of quite an hour; so there can be no mistake about it.

"The mode in which birds sometimes build their nests is certainly curious and incomprehensible; for how is it that the Fire-crested Wren builds sometimes in thin juniper bushes in the immediate neighbourhood of pine trees, which would prove a much better place to hide their nests, which are generally so carefully concealed? and how is it that the otherwise so shy

Rock Thrush nested at Leutesdorf, on the Rhine, in an earthenware jug, when in the immediate neighbourhood were steep rocks, 200 feet high, and plenty of vineyard walls?"

Pastor Pässler (Bädeker, 'Die Eier der europäischen Vögel,' pl. 43) has also *often* observed that the Crested Tit builds a large, longish nest on trees, formed outside of fir twigs and thorns, and the inside made of dry grass, having an entrance at the side. Occasionally, but seldom, one of the eggs has, besides the usual spots, blackish scratches on it.

Thus it will be seen from the above that our friend Mr. Sachse is not the only person who has remarked on these peculiarities in the nidification of the Crested Tit.

The Crested Titmouse has not yet been observed in Turkey, according to Mr. Robson, who writes to us:—

"I have never seen this bird in Turkey, and I am too well acquainted with the species to have overlooked it. In my collection at Newcastle I have a pair collected by Mr. Horatio Wheelwright in Scotland."

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, b. Carlstadt, Sweden (*Wheelwright*). *c, d.* France (*Fairmaire*). *e, f, g.* Gibraltar (*Irby*).

E Mus. Lord Lilford.

a, b. Sweden (*Wheelwright*). *c.* Peñas de Oroel, Aragon (*Lilford*).

E Mus. H. B. Tristram.

a. Scotland (*H. B. T.*).

Genus ÆGITHALUS.

Parus apud Linnæus, Syst. Nat. i. p. 342 (1766).
Ægithalus, Boie, Isis, 1822, p. 556.
Pendulinus apud C. L. Brehm, Isis, 1828.

The Penduline Titmice, though allied to the true Titmice, differ so far both in form and habits as to constitute a very distinct genus. Only two species occur in the Western Palæarctic Region; and the geographical range of these is given under the separate articles on them. These Titmice frequent damp marshy localities, and in general habits are less active and lively than the true Titmice; their note is also said to resemble that of the Wood-Wren, and not that of the other Titmice. They feed on insects and small seeds, and are peculiar in their mode of nidification; for they build a most artistically constructed poke-shaped nest of marsh-cotton or some other vegetable substance, very large for the size of the bird, and attached to the pendent branches of a tree or bush. The eggs differ from those of the other Titmice in being rather elongated in shape and pure white in colour.

Ægithalus pendulinus, the type of the genus, has the beak rather short, straight, very pointed and sharp at the tip; nostrils basal, concealed by reversed bristly feathers; gape without any bristles; wings moderate, the first quill very short, the second, third, and fourth nearly equal, the third being the longest; tail rather long, slightly emarginate; tarsus moderate, covered in front with four plates and three inferior scutellæ; feet moderate; claws stout, strong, curved, laterally grooved; plumage less lax than in the other Titmice.



J.G.Keulemans lith.

M&N.Hanhart imp

PENDULINE TITMOUSE.
ÆGITHALUS PENDULINUS.

ÆGITHALUS PENDULINUS.

(PENDULINE TITMOUSE.)

Parus polonicus sive *pendulinus*, Briss. Orn. iii. p. 565 (1760).
Parus pendulinus, Linn. Syst. Nat. i. p. 342 (1766).
Le Remiz, Montb. Hist. Nat. Ois. v. p. 423 (1778).
La Penduline, Montb. tom. cit. p. 433 (1778).
Parus narbonensis, Gmel. Syst. Nat. i. p. 1014 (1788).
Ægithalus pendulinus (L.), Boie, Isis, 1822, p. 556.
Pendulinus polonicus, C. L. Brehm, Vög. Deutschl. p. 476 (1831).
Pendulinus medius, C. L. Brehm, op. cit. p. 477 (1831).
Pendulinus macrourus, C. L. Brehm, op. cit. p. 477 (1831).
Pendulinus macrurus, C. L. Brehm, Vogelfang, p. 244 (1855).
Ægithalus pendulinus, var. *jaxartica*, Severtzoff, Turk. Jevotn. pl. ix. fig. 2 (1873).

Remiz penduline, French; *Fiaschettone*, Italian; *Beutelmeise*, *Pendulinmeise*, German; *Remess*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 618. fig. 3, and 708. fig. 1; Werner, Atlas, *Granivores*, pl. 16; Fritsch, Vög. Eur. taf. 27. fig. 8; Naumann, Vög. Deutschl. taf. 97; Gould, B. of Eur. pl. 159; Bechst. Orn. Taschenb. pl. 16.

♂ *ad.* fronte et capitis lateribus nigris, pileo in parte frontali vix castaneo tincto: pileo, nuchâ et collo postico albis vix cano tinctis: regione interscapulari castaneâ, dorso postico et uropygio ochraceis: remigibus et rectricibus nigricantibus albo marginatis: tectricibus alarum superioribus nigris et castaneis, rufescente ochraceo apicatis: mento et gulâ albis, corpore reliquo subtùs albido vix ochraceo tincto, pectore vix castaneo notato: rostro corneo, iride fuscâ, pedibus nigris.

♀ *ad.* mari similis sed coloribus sordidioribus, pileo et collo grisescentioribus, nigro in fronte et capitis lateribus minus extenso.

Juv. fronte, pileo, capitis lateribus et collo postico cinereo-canis, dorso et uropygio ochraceo-cervinis nec castaneo notatis: alis et caudâ sicut in adulto picturatis sed conspicuè cervino et albo-cervino marginatis: corpore toto subtùs albo.

Adult Male (Piedmont, 20th April). Forehead and sides of the head, including the ear-coverts, deep black, the fore part of the crown, on the margin of the black forehead, slightly tinged with rufous; crown, nape, and hind neck white with a bluish grey tinge, fore part of the back chestnut-red, rest of the back and rump warm ochreous; quills and tail blackish, edged with white; upper wing-coverts dark chestnut and black, tipped with warm ochreous; chin and upper throat pure white; rest of the underparts white

with a warm ochreous tinge, the breast slightly marked with chestnut-red; bill horn-colour; iris brown; legs black. Total length about 4·25 inches, culmen 0·4, wing 2·15, tail 1·95, tarsus 0·5.

Adult Female (Piedmont, April). Differs from the male merely in having the head and neck greyer in tinge, the black on the forehead and sides of the head covering a smaller area, and the rest of the plumage rather duller in tinge than in the male.

Young (Ural, July). Differs from the adult in having the forehead, crown, sides of the head, and hind neck ashy grey without any sign of black; back and rump dull warm cream-colour without any tinge of chestnut-red; wings and tail as in the adult, but very broadly margined with buffy white or warm buff; entire underparts white.

The present species of Penduline Titmouse inhabits Southern Europe, ranging eastward at least as far as Turkestan; but whether further east I am unable to state with certainty, not having been able to examine a specimen from the Amoor, where either this or an allied species occurs.

It does not inhabit Great Britain or Scandinavia, and does not range far north in continental Europe. Mr. Taczanowski informs me that it is not uncommon in Poland, though, owing to its retiring habits, it is, comparatively speaking, but little known. It breeds numerously in various portions of the Government of Lublin, and is common on the shores of the lakes about fifteen kilomètres from Lubartoff. Along the borders of the Vistula it occurs commonly in isolated pairs or small parties, and is met with even close to Warsaw. In Poland it is only a summer visitant, leaving on the approach of winter. Meyer states (Vög. Liv- u. Esthl. p. 139) that it is common in Lithuania; and Naumann says that, on the whole it is a rare bird in Germany, except perhaps in the southern and south-eastern portions. In Silesia and Austria it is seen annually, and this might be said of several other localities, were it not that this bird is so secretive in its habits. On the Salt Lake, in Mansfeld, it appears almost every year; and Bechstein states that in some seasons it is quite numerous in September and October on the Siebleber pond near Gotha.

Borggreve records it as a rare straggler in South-eastern Germany; according to Schäfer it has occurred once on the Mosel; and Gloger states that it is often found in Silesia, and that nests have been taken there. According to Mr. Carl Vangerow (J. f. O. 1855, p. 188), Dr. Kutter found a nest of this bird on a small island in the Zoological Gardens at Berlin, in 1854; and Pastor Pässler states that his cousin, Dr. G. O. Piper, once found it breeding near Bernburg, on the Saale. Dr. Rey, however, says that, in spite of the statements by Naumann and Nitzsch, he doubts its ever having bred near Halle.

I do not find any record of its having been met with in Holland; but it was once observed in the Department of the Moselle. Degland and Gerbe record it as found in the Department of Hérault, and numerous during the summer near Pézénas. It is also found in Provence during migration, and is occasionally seen on the Seine Inférieure. Mr. Hardy procured one near Dieppe. Jaubert and Barthélemy-Lapommeraye record it as sedentary, but rare, in Provence. It is tolerably often seen on the banks of the Rhône and in the low plains of Languedoc. I do not find it recorded from Portugal; but it occurs in Spain, near Valencia, where it breeds at the Albufera and at Sueca. According to Bailly it is of accidental occurrence in Savoy during

passage, but is much rarer than the Bearded Titmouse, and is never seen in winter. According to Salvadori it is found in Piedmont, Lombardy, Venice, and Tuscany; and Malherbe states that it is resident in Sicily, where it breeds in the marshes near Catania and on the banks of the Anapus and the river of Cyane. In Piedmont, however, it is certainly not resident, but arrives in March or April, leaving again in the autumn. Mr. A. B. Brooke informs me that it has not yet been observed in Sardinia, nor does it occur in Malta. In Southern Germany, as above stated, it is said to be not uncommon in some localities, but it appears to be rare in Bohemia; for Dr. A. Fritsch says that he only knows of one authentic instance of its occurrence there, viz. near Münchengrätz in 1850; and as regards its occurrence in Austria, Herr von Pelzeln states that one was obtained in the City of Vienna, between the bridges. Messrs. Danford and Harvie-Brown write (Ibis, 1875, p. 303) that in Transylvania it is "rare. Herr Klir, when with us, saw three at a lake near Záh, in the Mezöseg. Bieltz says that he received a nest and eggs which were taken on the Maros river, near Karlsburg, and that it has also been found on the lakes at Tövis. Herr Ottó remarks that this species only came once (1872) to the Mezöseg, and then disappeared quickly." It is said to be tolerably common in some parts of Hungary; and it is also found in Greece and Turkey. Dr. Krüper says that it inhabits the marshes of Greece, but is very difficult to find. In 1873 he obtained in a dried-up marsh in the valley of the Parnassus four nests, some with, and others without eggs; and he caught the birds alive. He received the first nest, containing one egg, early in May. Lord Lilford states (Ibis, 1860, p. 233), it is "common in the great marshes at the mouth of the Acheron, in Epirus, in winter, and, I believe, resident there. It is curious that, though I am acquainted with many apparently equally suitable haunts for this species in Epirus, the above is the only locality in that country in which I have ever seen or heard of it." In Southern Russia it is, Mr. Sabanäeff informs me, tolerably common, but rarely penetrates into Central Russia. Its nest has been found as high as the district of Borowsk, in the Government of Kalouga. In the Ural it extends much further to the north, and is numerous in the districts of Ekaterinburg and Schadrinsk, nearly in 57° N. lat.

Its artistic nest, he writes, "is built almost always amongst the outer branches of the birch, rarely in a willow, and never in the reeds. It arrives about the middle of April; and at the end of May the nest contains often five to nine eggs. It leaves again about the beginning of September. Sometimes the nest has two entrances, and rarely two compartments or stories. It is considered to be a good remedy for fever and rheumatism." Professor von Nordmann speaks of it as being generally common in Southern Russia; but there is another perfectly distinct species near Astrachan (*Ægithalus castaneus*), which, until quite lately, has been confused with the common Penduline Titmouse. In Asia Minor it appears to be rare; for Dr. Krüper only mentions that his collector shot one in a marsh between Smyrna and Burnabat; but Herr Guido von Gonzenbach has found its nest there; Mr. C. Danford has also lent to me three specimens obtained by himself at Cæsarea, in Asia Minor. I do not find that the present species extends as far south as the southern shores of the Mediterranean; but to the eastward it is certainly found as far as Turkestan, if not further. Dr. Severtzoff figures it in his work on the fauna of Turkestan from the Jaxartes, and says that it breeds in Turkestan. De Filippi met with it at Mianeh, in North-western Persia, on the road between Tabriz and Kazvin; but Mr. Blanford informs me that there are no specimens in the collection at Turin. I am unable to state whether the present species is

the one found in South-eastern Siberia, as stated by Dr. Radde, not having been able to examine a specimen from there. This gentleman writes (Reis. im Süd. von Ost-Sib. ii. p. 195) as follows:—"In the middle of September these birds were migrating in small flocks on the willow-covered shores of the Amoor, in the Bureja Mountains. I procured a nest from near Selenginsk; it breeds there on the island of Selenga, and builds its nest chiefly of sheep's wool, in which goat- and horsehair, and occasionally dry grass straws are interwoven. Here the inhabitants call it *Remess* (a name which has extended from the Slavonic countries also into North Germany). The Mongols place great faith in the healing power of the nests of this bird; in order to cure intermittent fever one must inhale the smoke of a burning piece. The nest soaked in hot water is placed on parts of the body to cure rheumatic pains. Besides this, the Mongols and Russians living on the borders of Mongolia believe that when the nest has two openings the pair inhabiting it disagree, and, on the other hand, when, as is usually the case, it has but one opening, the male keeps watch there during the breeding-season. There are said to be nests with three entrances."

I am indebted to Mr. Taczanowski, of Warsaw, for the following notes on the habits and nidification of the present species:—"One can easily be aware of the presence of the Penduline Titmouse by its call-note, which resembles that of a Wood-Wren, but is much softer; and it does not become silent on the approach of any one. It builds in the poplar and alder trees in the woods, or in the willow bushes, always near the water or in the marshes. Their nests are suspended at different heights, and are in some places very inaccessible. They are found from 2 to 3 metres from the ground, and in dry districts as high as 10 to 20 metres, and are seldom concealed in the dense foliage, but generally built in an open situation. All the nests that I have seen were constructed of vegetable substances; but I have received specimens from the Syr Darya, in Eastern Siberia, which contained camel's and goat's hair, and also sheep's wool. To complete the structure they use some fibres of hemp or a bit of delicate bark taken from the branches of a species of willow. These fibres they attach to the extremity of a fine and flexible branch, and then line it with the down of willow, poplar, or rose-trees, and marsh-cotton, always commencing from the bottom and proceeding upwards. The interior contains a thick mass of down. The exterior is very thick and strong at the bottom. All nests, when finished, have an opening at the side through a curved passage which inclines gradually downwards. All nests with two entrances are unfinished; however, they have several times been found containing eggs; but whilst the female is sitting the male finishes the structure by degrees. To build a nest it generally takes about four weeks. In colour the nest is pure white; but when it contains much marsh-cotton it has a brownish tinge. The dimensions of three nests are as follows:—No. 1, length $6\frac{1}{2}$ inches, width $3\frac{1}{4}$, diameter of an opening 1; no. 2, length $6\frac{1}{2}$ inches, width 4, diameter of an opening 1; no. 3, length 5 inches, width $3\frac{3}{4}$, diameter of an opening 1. The number of eggs is generally from five to seven. They are hatched about the end of May; and by the beginning of July the young birds leave the nests. According to Professor Kessler this species is common enough in the districts of Kiew and almost everywhere in the three governments mentioned in his work."

I possess several nests from Southern Russia and from Piedmont. Several of the latter are entirely constructed of flax, one being ornamented with small pieces of red and blue wool; and one from Southern Russia is composed entirely of marsh-cotton. Eggs in my collection from

Greece and Italy are pure white in colour, rather elongated in shape, and measure from $\frac{25}{40}$ by $\frac{16}{40}$ to $\frac{28}{40}$ by $\frac{17}{40}$ inch. Dr. E. Rey informs me that the average size of fifteen eggs in his collection is 16·35 by 10·85 millims., the largest measuring 17·75 by 11 millims., and the two smallest 15 by 10·75 millims., and 15·50 by 10·50 millims. respectively.

The specimens figured are the adult male and the young bird above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Piedmont, April 1st. *b*, ♂, *c*, ♀. Piedmont, April 20th, 1873. *d*, ♂. Piedmont, May 1st, 1869 (*Salvadori*). *e*, *f*, ♂. Southern Ural, April 30th and May 16th, 1869. *g*, *juv*. S. Ural, July 1872 (*L. Sabanäeff*). *h*, ♀. S. Russia (*Schlüter*).

E Mus. C. G. Danford.

a, ♀. Cæsarea, Asia Minor, May 3rd. *b*, ♂, *c*, ♀. Cæsarea, May 6th, 1876 (*C. G. Danford*).



J.G.Keulemans lith.

M&N.Hanhart imp.

CHESNUT CROWNED TITMOUSE.
ÆGITHALUS CASTANEUS.

ÆGITHALUS CASTANEUS.

(CHESTNUT-CROWNED TITMOUSE.)

Ægithalus castaneus, Severtzoff, Turk. Jevotnie, p. 136 (1873).

Figura nulla.

♂ *ad.* fronte et plagâ magnâ in capitis lateribus cum regione paroticâ nigris: pileo, nuchâ, collo postico, dorso et tectricibus alarum superioribus castaneis, pileo saturatiore: dorso postico et uropygio ochraceis vix rufescenti tinctis, supracaudalibus albo-cervinis: alis et caudâ ut in *Ægithalo pendulino* picturatis sed latiùs albo marginatis: mento et gulâ albis: corpore reliquo subtùs albo-cervino, pectore castaneo notato: rostro corneo: pedibus nigris: iride fuscâ.

♀ *ad.* pileo et nuchâ isabellinis, castaneo notatis: dorso sordidè castaneo, plumis ochraceo marginatis: alis et caudâ ut in mare picturatis: corpore subtùs pallidiore, mento et gulâ niveis.

Adult Male (Astrachan, May). Differs from *Ægithalus pendulinus* chiefly in having the crown, nape, and back chestnut-red, the breast marked with the same colour, the bill larger, and the white edgings to the quills and tail-feathers much broader; forehead and a large patch covering most of the side of the head, and the ear-coverts, deep black; crown, nape, hind neck, back, and wing-coverts rich chestnut-red, darkest on the crown; lower part of the back and rump warm ochreous; upper tail-coverts yellowish white; wings and tail as in *Ægithalus pendulinus*, but the white margins are much broader; chin and throat white; rest of the underparts buffy white, the breast much marked with chestnut, the feathers being that colour on the basal portion; soft parts as in *Æg. pendulinus*. Total length about 4·25 inches, culmen 0·4, wing 2·25, tail 2·05, tarsus 0·58.

Adult Female (Astrachan). Differs from the male in having the crown and nape dull isabelline, marked especially on the fore part and sides of the crown with chestnut-red; back dull chestnut-red, the feathers tippped with warm ochreous cream-colour; underparts much whiter than in the male, the chin and throat pure white, and the rest of the underparts white with a faint creamy tinge.

Obs. The intensity of the chestnut-colour on the head varies somewhat, and it appears to be assumed only by degrees; for in the series of males I possess there is a great variation in the amount of this colour, some having the entire hind neck still ochreous white. Besides other differences the present species has the head in the female, and those portions in that of the male where the chestnut-red is not assumed, cream-coloured, whereas in *Ægithalus pendulinus* it is always pale French grey or ashy white.

In spite of every endeavour, I have been able to glean but little information respecting the present species, which is quite distinct from *Ægithalus pendulinus*, and appears to have a much more restricted range. As yet I have only seen examples from Astrachan, where, judging from the large series sent by collectors, it must be common. Professor Eversmann described a specimen of this species as an adult male of *Ægithalus pendulinus* (Est. Ist. Orenb. iii. pp. 145, 147); but it appears doubtful if the specimen in question was obtained in Orenburg,

where the Penduline Titmouse alone is said to occur. Dr. Severtzoff, in describing the present species as new, says that all those collected by Pöltzam, which are now in the Kazan Museum, were obtained at Astrachan. It certainly does not range as far east as Turkestan; and examples I have seen from the Ural are referable to *Ægithalus pendulinus*; but I am quite unable to say how far to the westward it occurs, though probably it is not found far from the Volga.

In habits the present species is said not to differ from the Penduline Titmouse; and it builds the same peculiar gourd-shaped nest, laying eggs not distinguishable from those of that species.

There are altogether, besides *Ægithalus pendulinus* and the present species, two other tolerably closely allied species—*Ægithalus coronatus*, Severtzoff (Turk. Jevotnie, p. 136), and *Ægithalus macronyx*, Severtzoff (Turk. Jevotnie, p. 137), both of which inhabit Turkestan.

The former of these two, *Ægithalus coronatus*, is smaller than *Ægithalus pendulinus*, has a lighter back, and a white collar; the crown and sides of the head are black, a small spot in the centre of the crown being white, and some of the nuchal feathers tipped with white; the bill is also small and pointed. *Ægithalus macronyx*, on the other hand, is a larger bird than *Ægithalus pendulinus* or *Ægithalus castaneus*, has stouter and stronger legs and claws; but the fore part of the crown and the entire sides of the head and crown are black, the rest of the crown and nape being reddish brown in old specimens; the margins to the wings and tail are not white, but pale brownish. Both species are figured by Severtzoff (*op. cit.* pl. 9), who, when he paid me a visit not long ago, kindly brought specimens for examination, and enabled me to convince myself that these are both good species. In my notes on Severtzoff's work (Ibis, 1876, pp. 173, 174) I give a translation of this gentleman's original descriptions, and also particulars as to their range.

Before closing the article on the present species I may remark that M. Olphe-Galliard gives (Ibis, 1875, pp. 268, 269) an accurate description of the chestnut-crowned Titmouse, stating that he believes it to be new, but he does not give it a name.

The specimens figured are the adult male and female above described, both of which are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, ♂. Astrachan, May (*Schlüter*). *c, d,* ♂. Astrachan, April 1872 (*Möschler*). *e,* ♀, *f,* ♀. Astrachan (*Möschler*).

Family SITTIDÆ.

Genus SITTA.

Sitta, Linnæus, Syst. Nat. i. p. 177 (1766).

It appears to me that in habits as well as in structure the Nuthatches occupy a position very near the Titmice; and I have therefore placed them between the latter and the Creepers; but many authors have assigned to them a very different position. Keyserling and Blasius place them as I do, immediately after the Titmice; but Macgillivray places them between *Upupa* and *Picus*; whereas Degland and Gerbe separate them very far from both the Titmice and the Woodpeckers, bringing them in between the Kingfishers and the Creepers. Sundevall, on the other hand, makes a separate "cohors" of the Creepers and the Nuthatches, which he calls Certhiomorphæ, and places it between the Altinares, or corvine birds, and the Chelidonomorphæ or Swallows.

The Nuthatches belonging to the genus *Sitta* inhabit the Palæarctic and Nearctic Regions, ranging southwards into the Oriental Region and the northern portion of the Neotropical Region, whilst nearly allied genera belonging to the same family are found down into the Malay-archipelago and Australian subregions. Four species inhabit the Western Palæarctic Region, the range of which is given in the articles on those species.

In habits the Nuthatches are lively and active like the Titmice; but, unlike them, they move about the trunks of trees like the Creepers and Woodpeckers, without, however, using the tail as a support as those birds do; but they employ their strong, curved claws as a means of support, and may almost as often be seen climbing head foremost down a tree as head upwards. They feed on insects, which they search for amongst the rugged bark of large trees; and they are also partial to nuts, which they fix in a cleft in the bark of a tree, and perforate the shell with their powerful bills.

They make their nest in the hole of a tree, which they plaster up with mud until only a small entrance-hole is left, and deposit white eggs spotted and blotched with red. In the form of their bills they approach somewhat to the Woodpeckers, and in the formation of the feet and claws they are nearly allied to the Creepers.

Sitta europæa, the type of the genus, has the bill rather long, slightly conical, with the point sharp or somewhat wedge-shaped, lower mandible with the angle rather short, the tip acute, gape-line straight; tongue slender, abrupt, bristle-tipped; nostrils oblong, basal, exposed; wings long, broad, the first quill very short, the second shorter than the sixth, the third, fourth, and fifth nearly equal, the fourth being longest; tail short, even; tarsus short, compressed, covered in front with four plates and three inferior scutellæ; feet large, strong, the three anterior united at the base as far as the second joint; claws long, curved, very acute, laterally grooved; plumage soft and blended.



NORTHERN NUTHATCH.

SITTA EUROPÆA

143

SITTA EUROPÆA.

(NORTHERN NUTHATCH.)

Sitta europæa, Linn. Syst. Nat. i. p. 177 (1766).
Sitta septentrionalis, Brehm, Vög. Deutschl. p. 206 (1831).
Sitta advena, Brehm, Vög. Deutschl. p. 207 (1831).
Sitta uralensis, Licht. in Gloger, Handb. Vög. Deutschl. pp. 377, 388 (1834).
Sitta asiatica, Gould, B. of Eur. iii. pl. 236 (1837).
Sitta sericea, Temm. Man. d'Orn. iv. p. 645 (1840).
Sitta suecica, Brehm, Naumannia, 1855, p. 274.
Sitta sibirica, Brehm, tom. cit. p. 274.

Spetmeise, *Nœdvœkke*, Norwegian; *Spetmeise*, *Spethakker*, Danish; *Nötväcka*, Swedish; *Popolzen-Yamshik*, Russian.

Figuræ notabiles.

Gould, B. of Eur. iii. pl. 236; Sundev. Sv. Fogl. pl. ix. fig. 1; Fritsch, Vög. Eur. tab. 23. fig. 20.

Ad. suprà pulchrè cinereus: remigibus brunneis, primariis extùs cinereo limbatis, secundariis latiùs marginatis vix albido apicatis, intimis omninò dorso concoloribus: caudâ nigrâ, rectricibus duabus centralibus cinereis, proximis extùs cinereo, intùs albo terminatis, duabus extimis ad apicem cinereis, subterminaliter albo notatis, extimæ pogonio externo plerumque albo: fronte paullò albicante: fasciâ a basi rostri per oculos usque ad nucham productâ nigrâ: maculâ supraoculari et corpore subtùs toto albis, hypochondriis crissoque ferrugineis: subcaudalibus ferrugineis, albo conspicuè terminatis: subalaribus nigris, axillaribus cinereis: rostro corneo-fusco, subtus albido: pedibus cinereo-lutescentibus: iride griseo-fuscâ.

Adult Male (Stockholm, March 15th, 1871). Upper parts generally bright slaty blue, quills dark brownish slate, much lighter on the outer web, and slightly washed with pale rufous; the two central tail-feathers slaty blue, like the back, the outermost on each side black at the base, greyish at the tip, with a broad subterminal white band, the next in order similar, but having the band on the inner web only, the remainder black at the base and grey at the tip; from the base of the bill, through and behind the eye to the back, is a broad black line, indistinctly bordered on the upper edge with hoary grey; throat, neck, and underparts generally pure white; flanks rich chestnut-red; under tail-coverts white, broadly margined with chestnut-red; under wing-coverts blackish; legs greyish; bill brownish horn, lower mandible whitish; iris greyish brown. Total length 6 inches, wing 3·5, tail 2·0, tarsus 0·8, culmen 0·85.

Adult Female (Hareskov, Denmark, January 17th, 1871). Similar to the male, but having the red on the flanks much paler, and the lower part of the abdomen slightly washed with pale rufous buff.

Young Female (Maltesholm, Sweden, June 11th, 1867). Upper parts much duller than in the adult bird, the black band through the eye not so dark-coloured; beak smaller and weaker, and the lower part of

the abdomen washed with pale reddish buff; flanks and under tail-coverts rufous buff where in the adult bird they are rich chestnut-red.

Obs. After a careful examination of a series of specimens from different localities, from Scandinavia to Japan, we have come to the conclusion that *Sitta europæa* is the species found throughout that tract. The Scandinavian bird, however, is more robust than the Japanese bird; and the latter is somewhat purer in colour, has the flanks less richly marked with rufous, and the forehead and the upper edge of the black facial line greyish white, in some specimens almost pure white; but this latter is, to some extent, present in one of the Swedish examples, and still more so in one from Moscow, which has the forehead and a narrow line above the eye, bordering the black line, distinctly hoary. Some specimens have the lower part of the abdomen very faintly washed with pale rufous; but nearly all of these are females. Those from Moscow and Lake Baikal have the underparts purer in colour than any of the others; and all the Japanese birds have the lower part of the abdomen very faintly washed with rufous buff, and the flanks are scarcely so richly coloured as in specimens from Lake Baikal and Scandinavia. In size they are everywhere subject to variation; the largest Scandinavian bird measures as follows:—wing 3·5 inches, tail 2·0, tarsus 0·8, culmen 0·85; and the smallest, wing 3·2, tail 1·8, tarsus 0·75, culmen 0·65: the largest Lake-Baikal bird measures, wing 3·2, tail 1·9, tarsus 0·75, culmen 0·70; and the smallest, wing 3·05, tail 1·75, tarsus 0·70, culmen 0·65: the largest Japanese specimen, wing 3·35, tail 1·90, tarsus 0·8, culmen 0·75; and the smallest, wing 3·1, tail 1·75, tarsus 0·70, culmen 0·70 inch. We refrain from giving measurements of the total length, as so much depends on the mode in which the skins are made up, that but little reliance can be placed on these measurements taken from dried skins.

This, the Common Nuthatch of Northern Europe, does not occur in Great Britain, but is found throughout the whole of Northern Europe and Asia, extending through Siberia into Japan. In Scandinavia it is tolerably common as far to the north as the hazel and oak grow, but does not appear ever to range above the oak region. In Norway it is a resident, only undertaking short excursions from its breeding-haunts during the autumn and winter, returning again to breed. According to Mr. Collett it is usually nnmerous near Christiania, but some seasons, on the contrary, it is rare. In Sweden, according to Professor Sundevall, it is found up to about 60° N. lat.; and Dr. C. R. Sundström writes to us that this Nuthatch "is by no means rare in Central and Southern Sweden; but it is difficult to say how far north it is to be found. It certainly occurs as high as the oak grows, to about 60° N. lat. I have found it on the islands off Bohuslän and Södermanland when collecting on the coast." Dresser met with it on several occasions between Stockholm and Gefle, but did not see it when in Finland, where, according to M. von Wright, it has only occurred on two occasions—once in October 1824; and a specimen, now in the Museum at Helsingfors, was shot by Dr. C. Lundahl, at Tammerfors, on the 21st of November 1853. Throughout Northern and Central Russia, we are informed by Mr. Leonida Sabanäeff, "the Nuthatch is comparatively rare, and the Ural species (*S. uralensis*) is the one usually found. Near Moscow I observed it only during the spring migration, never in the summer season. It breeds, however, in the Government of Kieff, but is there rarer than the variety with the white belly and slender beak." We have had an opportunity of examining specimens obtained by Mr. Sabanäeff, near Moscow, and in the Ural, labelled by him *S. uralensis*, and find them precisely identical with Scandinavian examples of *Sitta europæa*. How far to the south-

ward the present species is found it is very difficult to state with any degree of certainty, as most authors have referred to *Sitta cæsia* under the name of *Sitta europæa*, considering the two species identical—a view which we certainly cannot indorse. The bird referred to under the name of *Sitta europæa* by the writers on the ornithology of Central and Southern Germany must, we consider, in all instances, be referred to *Sitta cæsia*; for we can find no instance on record of the occurrence of the present species further south than Denmark. Our friend Mr. Alfred Benzon, who, however, we may add, looks on these two species as merely climatic races, informs us that the Common Nuthatch (*Sitta cæsia*) is found in Denmark, where it meets with the present species on Fyen in that country, and that *Sitta europæa* does not even range as far down as the south of Denmark.

In Europe, therefore, the Northern Nuthatch possesses a very restricted range; but to the eastward it is to be met with through Siberia as far as Japan. Von Middendorff found this Nuthatch in flocks on the 16th of April in the woods between the Amgá and the Aldán, in Siberia, and he also again observed it in the Stanowoj Mountains in the middle of May. We have carefully read over his descriptions, and convinced ourselves that the bird referred to by him is the true *Sitta europæa*. Von Schrenck refers to it as a common bird throughout Siberia; and Dr. G. Radde states that it is numerous in Dauria and Lake Baikal, but that in the Bureja Mountains the other species (*Sitta cæsia*) occurs, and has the underparts more richly coloured than the usual average of Central-European specimens. We ourselves have before us examples of *Sitta europæa* (obtained by Dr. Dybowski) from the shores of Lake Baikal, but have not been able to examine any of the specimens referred to by Dr. Radde as being obtained in the Bureja Mountains.

Mr. H. Whitely, in his notes on birds collected in Northern Japan, states that he found this species in great numbers in the woods near Hakodadi, and there obtained, in the months of October and November 1865, the specimens he sent home.

In its habits and mode of nidification the present species closely assimilates to our Common Nuthatch. Our friend Dr. C. R. Sundström informs us that in Sweden "during the spring and summer they are found in pairs, generally frequenting the oak-, beech-, or aspen-woods where old hollow trees are scattered about; during the autumn and winter, however, they appear to travel about singly, and at those seasons often visit inhabited places. Lively and active, the Nuthatch is almost always on the move, climbing up and down the trunks and boughs of the large trees, searching assiduously after food, which consists chiefly of insects and their larvæ and eggs. During the winter season it eats seeds of various sorts; and any that have hard shells it fixes in a convenient crack in a tree, and, hanging head downwards, breaks by repeated hard blows with its bill. It has also a habit of laying up a store for hard times in a hollow tree, often in the hole which it uses for the purposes of nidification. As its beak is not strong enough to enable it, like a Woodpecker, to hack its own nest-hole, it chooses some suitable ready-made hole, which, when too large, it plasters up with clay and damp earth, leaving an orifice just large enough to allow it to pass easily in and out. It lays six or seven eggs, which both the male and the female incubate." Mr. Benzon, however, as below stated, informs us that it occasionally lays as many as eight, and even nine eggs. This gentleman, who has given us the Danish names for this species, which we have noted above, further informs us that he has never

heard the name of *Nœddehakker*, which Kjærbölling quotes, used for this species in Denmark. Respecting its range in that country he writes that "it is tolerably common in the old woods and parks where hollow trees are numerous; but it used to be more numerous some years ago, when the old trees were left alone. It arrives early in the spring, and has often laid its entire clutch of eggs by the end of April. It breeds not only in the woods near Copenhagen in holes in oak, alder, and birch trees, but even in the gardens of the town where there are hollow lime-trees; and there its nest may be seen in holes so neatly closed with mud that the bird can only just pass in and out." The nest itself is there always composed of fallen and dead leaves. The male does not cease to bring new materials for lining the nest when the female is sitting; for Mr. Benzon observed at Charlottenlund a male carrying dead leaves to a hole out of which, a few days later, incubated eggs were taken; and he further states that he has seen the Common Sparrow do the same. The Nuthatch, he writes, "does not soil the trunk of the tree in which its nest is, like the Titmice and the Starling. It is by no means a very shy bird; and on the approach of any one it generally only passes round to the other side of the trunk of the tree on which it is climbing, and continues its search after insects in the crannies of the bark." Its chief food consists of various species of insects, chiefly those which are so injurious to the fruit- and forest-trees; but when insect food is scarce it does not disdain vegetable food; and Mr. Benzon informs us that he has often seen it come boldly to the kitchen-door in September and pick up melon-seeds. It usually deposits six or seven, or even eight or nine eggs, but only rarely the latter number. Nests containing both eight and nine eggs have been found in Zeeland, as also in Southern Sweden. Mr. Fischer has a clutch of nine taken at the Dyrehaven, near Copenhagen, on the 29th of May; and Mr. Benzon procured one with eight eggs at the same place on the 2nd of May, taking the female bird on her eggs. In his collection are also three clutches from Rönneby, in Blekinge—one of eight and two of nine eggs—taken in the first week in May. The earliest eggs Mr. Benzon has recorded were taken on the 25th of April, and the latest on the 15th of May; but it occasionally has eggs as late as June.

The eggs of this species are similar to those of *Sitta cæsia*, and vary from almost pure unspotted white to white thickly covered with fine spots and larger blotches of a bright red colour, which are often collected at the larger end. In size they appear to run rather larger than the eggs of the Common Nuthatch, as Mr. Benzon, who possesses a very large series, gives the sizes as varying from 20 by 15 to 22 by 16 millimetres; and this is borne out by specimens in Dresser's collection, in which, however, there is not a large series. Our friend Dr. E. Rey writes to us as follows:—"I do not consider that this bird differs specifically from *Sitta cæsia*, as I cannot detect the slightest difference in the colour, size, or number of their eggs, whilst the period of incubation and the construction of the nest are with both alike. I find the average size of eight eggs to be 19·3 by 14·6 millimetres, the two largest measuring 20·0 by 14·75 and 19·75 by 15·0 millimetres, the smallest 18·0 by 14·0 millimetres."

The specimens figured and described are in Dresser's collection; and we give above full particulars as to where they were obtained.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Sjælland, Denmark, October 21st, 1857 (*Benzon*). *b*, ♀. Häreskov, Denmark, January 17th, 1871 (*Benzon*). *c*, ♂. Stockholm, March 15th, 1871. *d*, ♂. Stockholm, October 9th, 1871. *e*, ♂, *f*, ♀. Stockholm, October 2nd, 1870. *g*. Moscow, October 1869 (*Sabanäeff*). *h*. Ural (*Sabanäeff*). *i*, ♂. Lake Baikal (*Dybowski*). *k*, ♂. Hakodadi, Japan, October 13th, 1865 (*Whitely*). *l*, ♀ *juv*. Maltesholm, Skåne, Sweden, June 11th, 1867 (*Meves*).

E Mus. Lord Walden.

a, ♂, *b*, ♀. Lake Baikal (*Dybowski*). *c*, ♀. Hakodadi, October 30th, 1865. *d*, *e*, ♂. Hakodadi, November 22nd, 1865 (*Whitely*).

E Mus. H. B. Tristram.

a, *b*. Kazan (*Eversmann*). *c*. Hadodadi, October 10th, 1865 (*Whitely*).



COMMON NUTHATCH.

SITTA CÆSIA

142

SITTA CÆSIA.

(COMMON NUTHATCH.)

Le Torchepot, Brisson, Orn. i. p. 588 (1760).
Sitta europæa, Lath. Ind. Orn. i. p. 261 (nec Linn. 1790).
Sitta cæsia, Wolf, Taschenb. deutsch. Vogelk. i. p. 128 (1810).
Sitta pinetorum, Brehm, Vög. Deutschl. p. 205 (1831).
Sitta foliorum, Brehm, tom. cit. p. 206 (1831).
Sitta affinis, Blyth, J. As. Soc. Beng. xv. p. 288 (1846).

Torchepot, French; *Muratore*, Italian; *Specht meise*, German; *Boomklever*, Dutch.

Figuræ notabiles.

Meyer u. Wolf, Taschenb. pl. to p. 128; Brehm, Vög. Deutschl. taf. xiv. fig. 4; Naum. Vög. Deutschl. v. taf. 139; Gould, B. Eur. iii. pl. 234; Kjærb. Orn. Dan. afb. x. fig. 6; Schl. Vog. Nederl. pl. 64; Fritsch, Vög. Eur. tab. 23. fig. 21.

♂ *ad.* suprà cærulescenti-cinereus, subtùs pallidè ochrascenti-cinnamomeus: fasciâ a basi rostri per oculos usque ad nucham productâ nigrâ: gulâ genisque albis: hypochondriis ferrugineis: alâ, caudâ, subcaudalibusque ut in *Sittâ europæâ* picturatis: rostro corneo-fusco, subtùs versus basin albido: pedibus pallidè brunneis: iride griseo-fuscâ.

♀ vix a mari distinguenda.

Juv. adulto similis sed paullo sordidior.

Adult Male. Resembles *Sitta europæa*, but has the upper parts, if any thing, rather duller in colour, and the underparts pale ochreous cinnamon instead of white: the throat and sides of the head below the moustachial streak are white; and the legs, instead of being plumbeous grey, are pale dull brown; bill similar to that of *S. europæa*. Total length 5·6 inches, culmen 0·7, wing 3·3, tail 1·8, tarsus 0·8.

Female. Very similar to the male, but, if any thing, rather duller in colour.

Young. The young bird of the year has the upper parts duller than in the adult plumage, and the underparts duller and paler, the rufous colour on the flanks being also much duller.

Obs. Specimens from Southern Europe have the underparts much richer-coloured than those from the north, British-killed examples being, so far as I can judge, the dullest in colour.

This being the last of the Nuthatches of which I shall have to treat as found within the limits of the Western Palæarctic Region, I may pause a few moments to give a glance over this family, and, in making the following remarks, may state that, as usual, I take Mr. G. R. Gray's well-known 'Hand-list' as a basis, the numbers being those used in the said list:—

2483. *Sitta europæa*, L., is, as stated in a previous number, found throughout Northern Europe, eastward to Japan. It differs from the next species in having the underparts generally white, and the legs plumbeous grey.

2484. *S. cæsia*, Wolf & Meyer, differs from the preceding species in having the underparts dull cinnamon instead of white, and the legs dull light brown instead of plumbeous grey. Its range is given above.

2484 *a*. *S. cashmirensis*, Brooks (Journ. As. Soc. 1872, p. 73), is described, from the forests of Cashmere, as differing from *S. cæsia* in having no white edging to the under tail-coverts.

2484. *S. neumayeri*, Mich. (*syriaca*, Ehr.), differs from *S. europæa* and *S. cæsia* not only in its habits, being a frequenter of the rocks, and not of the trees, but also in plumage and size, as it has the underparts white, clouded with fulvous towards the vent, and lacks all white on the tail-feathers, *S. europæa* having the outer feathers broadly banded with white. It also has much more powerful bill and feet than the two preceding species. My friend and late colleague Mr. R. B. Sharpe has lately described (Ann. Nat. Hist. 1872, p. 450), under the name of *Sitta tephronota*, a Rock-Nuthatch from Central Asia, which, after most careful comparison, I cannot allow to be a good species, but merely a pale specimen of *S. neumayeri*. Mr. Blanford brought home a series of these pale birds from Shiraz, in Southern Persia, from the examination of which I am fully convinced that Mr. Sharpe's species cannot stand. On the other hand, Mr. Blanford has described a small Rock-Nuthatch from the Elburz Mountains, north of Tehran, under the name of

2485 *a*. *S. rupicola*, Blanf. Ibis, 1873, p. 87, which I think will stand as a good species. It is much smaller than *S. neumayeri*, and has much more slender feet and bill, the black stripe on the side of the head being also much less developed. It is as yet only known from the Elburz Mountains.

2486. *S. himalayensis*, Jard. & S., is a very much smaller bird than *S. cæsia*, to which it is nearest allied, and not only has the underparts much brighter-coloured, but differs in the arrangement of the white on the tail-feathers, there being a distinct white spot near the base of the two central feathers. It occurs on the southern slope of the Himalayas, in Kumaon, Nepal, and Bootan.

2486 *a*. *S. neglecta*, Walden (Ann. Nat. Hist. ser. 4, vol. v. p. 218), from the Karen Hills, of the Toungoo district, Burma, is described by Lord Walden as differing from *S. himalayensis* by its much stouter and longer bill, by the deep ferruginous tint of the under surface, and by the absence of a white spot on the basal half of the middle rectrices.

2487. *S. castaneiventris*, Franklin, differs in having in the male the breast and lower underparts deep chestnut, the throat and face being white. Dr. Jerdon gives its range as "the jungles of Southern and Central India, from the extreme south to Rajmahal and Merzapore."

2488. *S. cinnamomeoventris*, Blyth, is closely allied to the preceding species, differing, according to Dr. Jerdon, "in having the bill broader, not so much depressed, and in being a somewhat stouter bird. It has only been procured in the South-eastern Himalayas."

2489. *S. leucopsis*, Gould. As stated by Dr. Sclater (Ibis, 1865, p. 310), "this species belongs to the same group as *S. carolinensis*, and is readily distinguishable from every other Asiatic species by its black head and nape." It differs from *S. carolinensis* in having the flanks and under tail-coverts rufous. It is, I believe, only known from Simla, where the specimens figured by Mr. Gould were obtained in the Mahasoo Forest at an elevation of 8000 feet.

2490. *S. carolinensis*, Lath, is found only in America, where, according to Dr. Sclater, it is "generally distributed over the North-American continent, from New Brunswick on the east coast and Washington territory on the west, down to the isthmus of Tehuantepec. It has the crown, nape, and fore part of the back black; rest of the back blue, and the underparts, with the sides of the face and neck, pure white.

2491. *S. canadensis*, Linn., is a small Nuthatch, having the head black, a white superciliary line passing over the eye, the back blue, and the underparts dull light cinnamon-brown. It is found in North

America in the United States, is common in Canada, and across to British Columbia, and has been obtained by Dr. Rae in lat. 66° N.

2492. *S. pusilla,* Lath., is a very small Nuthatch, dark plumbeous grey on the back, and dull brownish grey on the underparts, the crown and nape being rich reddish brown. It is found in the Southern Atlantic States of North America—South Carolina and Georgia being its head quarters.

2493. *S. pygmæa,* Vigors. Differs from the preceding species in having the back brighter in colour, and the head light brownish grey instead of rich reddish brown. It is found on the west coast of North America, where it replaces *S. pusilla.* Dr. Sclater has a specimen collected by De Oca at Xalapa.

2494. *S. aculeata,* Cassin, is, I take it, a mere variety of *S. carolinensis.*

2495. *S. krüperi,* Pelz., is a small Nuthatch, easily distinguished by its black forehead and broad chestnut pectoral band; otherwise it has the upper parts plumbeous blue, the throat white, and abdomen cinereous. It has only been met with in Asia Minor. Full particulars as to its habits and range have been given in a former part of the present work.

2496. *S. villosa,* Verr. (Nouv. Arch. du Mus., Bulletin, vol. i. p. 78, pl. 5. fig. 1). I have been unable to examine a specimen. It is described as inhabiting North China, and somewhat resembling *Sitta canadensis,* having a black head; but the underparts are described as being greyish rufous (cinereo-rufescens).

The range of the present species of Nuthatch may be described as Central and Southern Europe; for, though it has been stated to have occurred in Siberia, it appears to be much rarer in Asia than its northern ally, *Sitta europæa.* Mr. Blanford, however, brought home an undoubted specimen of *Sitta cæsia* from Persia.

In Great Britain it is the only species found, as I know of no record of the occurrence here of its northern representative, *Sitta europæa.* It is a common species in the south of England, especially in the nut-growing portions of Kent and other southern counties, where, owing to its predilection for nuts, it is by no means a favourite. Mr. Cecil Smith informs me that it is common in Somersetshire, especially in the orchards, and is called by the country-folk Blue Woodpecker. Mr. A. G. More gives its range as "throughout England, but rare in the north-western counties. Mr. Eyton describes the Nuthatch as common in Shropshire and North Wales. Mr. Gregson considers it numerous at Dunhorn Park, on the Cheshire side of the Mersey, and also in the woods at Wyresdale, North Lancashire; but Mr. Brockholes has not met with it in either county. Dr. Heysham records one pair as breeding regularly, in his day, in Cumberland. Mr. Hancock marks the Nuthatch as breeding occasionally in Durham; and Mr. Selby has found the nest in Northumberland." In Scotland it is extremely rare; and Mr. Robert Gray only gives three recent instances of its occurrence—one in Haddingtonshire, one in Berwickshire, and one on Shetland; and as regards Ireland there is no authentic instance of its ever having occurred there.

Throughout Europe it is tolerably widely distributed, nowhere very numerous, but not rare in any suitable locality as far north as Denmark, where it meets with *Sitta europæa,* which species alone then occurs towards the north. Regarding its range in that country my friend Mr. Alfred Benzon writes to me that it "occurs on the peninsula of Jutland, and occasionally also on Fyen, where it appears to meet and join with the northern form. I do not know of its occurrence on the other islands, where the white-bellied variety alone appears to occur." Throughout the whole of Germany the present species is the only Nuthatch to be met

with; and as regards the northern portion of that country, it is, according to Borggreve, "a wanderer or partial migrant, but only common in the non-evergreen woods on the plains. In the mountains, however, it ranges up to the border of beech-growth." In Holland and Belgium it is common and sedentary, and, according to Degland and Gerbe, equally numerous in almost all the large woods of France and Switzerland. Jaubert and Barthélemy-Lapommeraye record it from Provence, where the same may be said of its occurrence and as regards its range as in other parts of France. In Portugal it is, according to Professor Barboza du Bocage, likewise common, though in Spain it appears to be rather local. Lord Lilford met with it there "commonly;" but Mr. Howard Saunders includes it in his notes on the birds of Southern Spain as "a very local species," Granada, where it was common, being the only place where it came under his notice. As regards this species in Switzerland my friend Dr. Girtanner, of St. Gallen, in a letter lately received, writes that "it is a common species everywhere in the lowlands and mountains of Switzerland, but it is not reckoned amongst the Alpine birds; it breeds twice in the year, making its nest in hollow trees or boxes hung up for the Starlings, and plasters up the entrance-hole with mud, leaving a small circular entrance just large enough to allow the old bird to pass in and out. The nest inside (if nest it can be termed) is merely a bed of dry beech-leaves. The Nuthatch is a favourite bird with us in Switzerland, where it is certainly found breeding as high up in the mountains as the Alpine forests, where it feeds on beech-nuts and seeds of the *Pinus cembra* and fir, and collects and stores a supply of food (as it likewise does when in confinement); it will deposit large quantities of hemp-seed, hazel-nuts, &c. behind a piece of bark, and continually go to look after them. It is amusing to watch a Nuthatch work a nut into a crack in the bark until it is fixed there, and work at it until the shell is broken. A few Nuthatches remain with us over the winter." From Italy I have in my collection several specimens sent to me by Count Salvadori, who states that it is there a common bird; and Professor Doderlein writes that it is "common and sedentary in Sicily, as also in the country about Modena." Mr. A. Basil Brooke also informs me that it is "moderately common in Savoy, in the neighbourhood of St. Michel, where I observed it during winter. It has not yet, so far as I am aware, been discovered in the Island of Sardinia." In Greece it is, according to Lindermayer, "resident in the northern portion of the country, but it does not occur on the islands;" and in a letter I have received from Dr. Krüper, he informs me that he found it common in the woods of Acarnania and Ætolia, as also in the mountains of Parnassus and Olympus. Messrs. Elwes and Buckley record it as numerous in Macedonia and near Constantinople; and I myself met with it commonly in Austria, Styria, and the countries skirting the Danube, in all suitable localities, and especially numerous in the oak-woods of Wallachia and Servia. A Nuthatch is referred to by Ménétries as common in the forests of Lenkoran, which I think may be the present species. It is said to occur in Asia Minor; and Dr. Krüper informs me that his hunter declared that he had seen it in the woods near Smyrna, but that he himself never met with it there. Canon Tristram found it in Palestine, where a specimen was shot by Mr. Bartlett in a wooded glen under Hermon; and it was afterwards met with in the Lebanon. In North-east Africa it does not occur; but Loche records it from Algeria, where, he states, it is not common, but he met with it in the territory of Beni-Menassed, where it is sedentary. It has furthermore been included in the earlier lists of the birds of the Canaries; but Dr. C. Bolle considers that it does not really occur there. Concerning its range in Asia

there is but little on record. I have examined a specimen obtained by Mr. Blanford at Mazandaran, in North Persia, which is certainly a typical example of *S. cæsia*, and does not in the least differ from ordinary European birds. The bird procured by Mr. W. E. Brooks in Cashmere, and described by him under the name of *S. cashmirensis* (Journ. As. Soc. 1872, p. 73), certainly approaches very closely to, if it is not absolutely identical with, our common European bird; but the under tail-coverts in this Cashmere bird being without any white edging, and the abdomen, flanks, and lower tail-coverts darker than in *S. himalayana*, rather point to a distinct race. I regret that I have no specimen to compare with my series of *S. cæsia*. In measurements, I may remark, Mr. Brooks's bird agrees with *S. cæsia*. Dr. Radde refers to a Nuthatch as found on the Amoor, which appears to me to be either the present species or the race found by Mr. Brooks in Cashmere. Dr. Radde, who refers to *S. cæsia* as *Sitta europæa typica*, and to the true *Sitta europæa* as *Sitta europæa uralensis*, speaking of the Nuthatches of Siberia, writes as follows:—"The typical European variety certainly predominates in Southern Siberia; and the Nuthatches of the Bureja Mountains were either precisely similar to those found in Central Europe, or else had the reddish brown portion of the plumage darker and richer-coloured." However, not having been able to examine any specimen of the Nuthatch referred to by Dr. Radde, I am unable to give a decided opinion as to what it really is.

As regards the habits of the present species, they do not in any way differ from those of *Sitta europæa*. It is everywhere sedentary, only taking short journeys in the autumn and winter, being probably driven from its summer haunts by scarcity of suitable food. Naumann, writing on its habits in Germany, says that "it is rather a wanderer than a true migrant. Many certainly do not leave the wood (where they have spent the summer) during the cold season, if not driven out by want of food: but these are comparatively very few; for most wander off in the autumn and travel through places where they have not been during the summer, and where there is less wood, and spread wherever they can find food. Towards the spring they leave these localities, and revisit their breeding-haunts. The autumn wandering takes place in company with Coal and Blue Titmice in September and October, and to some extent in November; but in spring they soon return, and in February or March, if the weather is fine, are again in their breeding-places. They return so imperceptibly that one must suppose that they return by some other way than that they took in the autumn." Some excellent field-notes were communicated by Mr. Harley to Macgillivray, which I transcribe as follows:—"This bird remains with us throughout the year, inhabiting the park and old enclosure more than the hedge-row trees or the dense umbrageous wood. In fact, I have never seen it upon our hedge-row trees, although I have often sought for it when I have been watching the haunts of the Woodpeckers, which so much resemble it in their habits. In winter it is not quite mute, but has a small piping note, not unlike that of the Creeper. This is a call-company note, inasmuch as the Nuthatch in winter feeds in little companies or families of four to six individuals. On the 21st of November (1839) I went after a pair of the Greater Spotted Woodpecker and a pair of Nuthatches in Garrendon Park (near Leicester), the weather being mild, but gloomy, and the wind south. It was not without difficulty that I found the Nuthatches, which invariably feed where the trees are most protected from the wind. Thus, when the south or forest wind is playing upon the park, the Nuthatches are to be found amongst the large oaks and elms on the north side of it; and when

a north-easter is blowing, these birds are found feeding on the beeches, chestnuts, and pines which grow on the south side. I know of no birds whose habits and manners are so operated upon by the movement of the wind. Whether this arises from their being so much exposed to the weather, in consequence of their being almost constantly on the bark of trees at all seasons of the year, I cannot say. The Nuthatch searches the bark like the Creeper, but without deriving aid from its tail, and is able to descend with as much ease as it climbs. You see it now ascending spirally the bole of an oak, then creeping horizontally along an arm, now above, now beneath, and again hanging like a Tit, as it gains the thickened foliage, to examine every crevice of the bark, and the young buds. It proceeds by short leaps, jerks, or notches, and during its progress droops its wings somewhat after the manner of the Hedge-Sparrow. At this season (November) it generally keeps toward the middle and topmost branches of the trees it inhabits; but as the spring advances it not only feeds lower down on the bark, but may then be observed occasionally betaking itself to the ground. The note in spring is quite different, having in the vernal months a soft flute-like sound, which it gets in February, but somewhat earlier or later according to the nature of the season. The flight of the Nuthatch is very short, and in fact is only made from one tree to another, or from branch to branch. When the bird is flying, it moves its wings very rapidly; and during these short flights its course is not undulating. In its mode of flying it bears a great resemblance to the Wren. The pair which I have forwarded for your inspection were shot from the bark of an oak. You may fire several times into the same tree without causing the birds (which at this season are in families) to leave it, although one or two should be killed. When these were obtained, four shots were fired, yet all this cannonading did not drive off the other four birds, which remained until we departed. In the stomach of these individuals I found fragments of small coleoptera, several small white pupæ contained in very hard elliptical shells, some farinaceous-looking matter in small pieces or chips, a few husks of grasses, and several particles of quartz, the largest two twelfths of an inch in their greatest diameter. The figure and description of the alimentary canal is taken from one of these specimens, a male, as are the measurements of the bill, feet, and other parts."

This Nuthatch is met with during the breeding-season in Great Britain and throughout Germany, France, and to the south into Greece, where, according to Lindermayer, it is resident in the northern parts of the country. I myself met with large numbers of this Nuthatch breeding in the oak-woods at Ilovetz, below Orsova, on the Danube, and obtained quite a number of their eggs in one day. Taking a couple of young Wallack peasant lads with me for a day's birds' nesting in the spring of 1866, I was told by them that the most numerous species would be this Nuthatch; and this certainly was the case, as a nest was found almost every hundred yards. The lads had a very ingenious mode of getting up to the nests. A long, straight, and slender sapling with as many branches as possible on it was selected, cut down and trimmed, the branches being cut off to within about four inches of the main stem, and either a strong branch left long at the foot, or a stout crook lashed on. This pole was either placed against a tree and used as a ladder, the branches acting as steps, or else it was hooked on to a branch and used as a hanging ladder, and, when mounted, was again hooked on to another higher branch; and thus in a very short time the lads would reach the top of the tallest trees. I used this primitive ladder, and found it most useful. Some of the nests found were in quite large holes, the birds

having used a large quantity of mud in plastering them up to suit their requirements. The earth used was excellently prepared, some of the masonry being remarkably strong; and although this bird is said to work very rapidly, the construction of some of these nests must have been a tedious task. Of the eggs of this species I have in my collection a considerable series, chiefly obtained by myself in England and on the Danube. In size these eggs vary from $\frac{31}{40}$ by $\frac{22}{40}$ to $\frac{32}{40}$ by $\frac{23}{40}$ inch, and in general coloration resemble those of *S. europæa*, but are rather less spotted. My friend Dr. E. Rey, writing from Halle, in Saxony, informs me that he has "taken fresh sittings of eggs from the 16th of April to the 27th of May. The full complement of eggs appears to be eight or nine. The average size of thirty-eight in my collection is 19·9 by 14·6 millimetres, the two largest measuring 22·25 by 14·50 millimetres and 21·25 by 15·25 millimetres, the two smallest 18·75 by 15·0 millimetres and 20·25 by 14·0 millimetres.

"A couple, which I kept in captivity, became so tame that, after being set at liberty, they for some time returned daily through an open window to be fed."

The food of the Common Nuthatch consists chiefly of small insects and their eggs, which it picks out of the crannies in the bark of trees; but it also feeds on vegetable food, and has no small partiality for hazel-nuts, filberts, and beech-nuts. Pastor Snell states (Cab. Journ. 1857, p. 188) that it feeds on the poisonous berries of *Bryonia dioica*, L.; and Mr. C. von Heyden (Cab. Journ. 1859, p. 316) also remarks that during the winter it often eats the larvæ of the beech-gall-insect, *Cecidomyia fagi*.

Before closing the above article, I must not omit to refer to a most remarkable nest recorded by the well-known British ornithologist Mr. F. Bond, who, writing to 'The Field' for the 28th of October, 1871, gives the following particulars:—"I have received this summer from the neighbourhood of East Grinstead a nest built by a pair of Nuthatches, which is so remarkable in its construction and in the site selected for it that I think a notice of it is worth recording. It is well known that the Nuthatch almost invariably makes use of a hole, either in a tree or wall, in which to deposit its eggs, and is not, in the strict sense of the word, a nest-builder. In this instance a haystack was selected; and the birds, by pulling out a quantity of the hay and plastering up the hollow with mud brought from a considerable distance, formed a nest of similar construction to that of a Swallow, but very much larger, with an entrance-hole near the top, and the ends of the hay stems neatly embedded in the mud. The particulars, which were sent to me with the nest, are shown in the following letter of my correspondent:—

"'East Grinstead, Sept. 8, 1871.

"'Sir,—The height of the nest from the ground was between 5 and 6 feet; the lining was composed of decayed leaves only (inclosed are a few which fell from the nest during the packing); the birds were observed pulling the hay from the stack till they had formed a large opening before they commenced building with mud, which they had to carry about 150 yards, that being the nearest point where they could obtain it. My informants (two men working on the farm) say that they saw the birds were building for a very long time, quite six weeks or two months, and they could not understand what the birds were plastering a lot of mud on the stack for. W. May.'

"To this I may add that the nest when cut out of the stack weighed as nearly as possible 11 lb., and measured 13 inches in length by 8 inches in its greatest breadth and 4 inches in thickness. The lining, which my correspondent mistook for dead leaves, was in reality com-

posed of the scaly inner bark of the fir. There were five eggs, one of which was unfortunately broken.

"When we consider the comparatively small piece of mud which can be carried in the bill of a Nuthatch, and the great distance from which it had to be brought in this case, the size and weight of the nest are most extraordinary."

The specimens figured and described are those referred to below as specimens *h* and *i* in my own collection, which I have selected as being fair average specimens, the British-killed birds being, as a rule, much duller than those obtained on the Continent.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b. Middlesex, November 21st, 1865; *c.* March 17th, 1866; *d*, ♂. November 17th, 1869; *e*, ♂. Hampstead, February 2nd, 1871 (*Davy*). *f*, ♂. Cookham, Berks, February 22nd, 1870 (*Briggs*). *g*, ♂. Alumdagh, Asia Minor, December 27th, 1863 (*Robson*). *h*, ♀. Ilovetz, Wallachia, April 4th, 1866 (*H. E. D.*). *i*, ♂. Piedmont, May 1866; *j*, ♂. February 1869; *k*, ♀. November 1869; *l*, ♂. April 1870. *m*, ♂. May 25th, 1870 (*Count Salvadori*). *n.* Macedonia, December 10th, 1869 (*Dr. Krüper*).

E Mus. Ind. Calc.

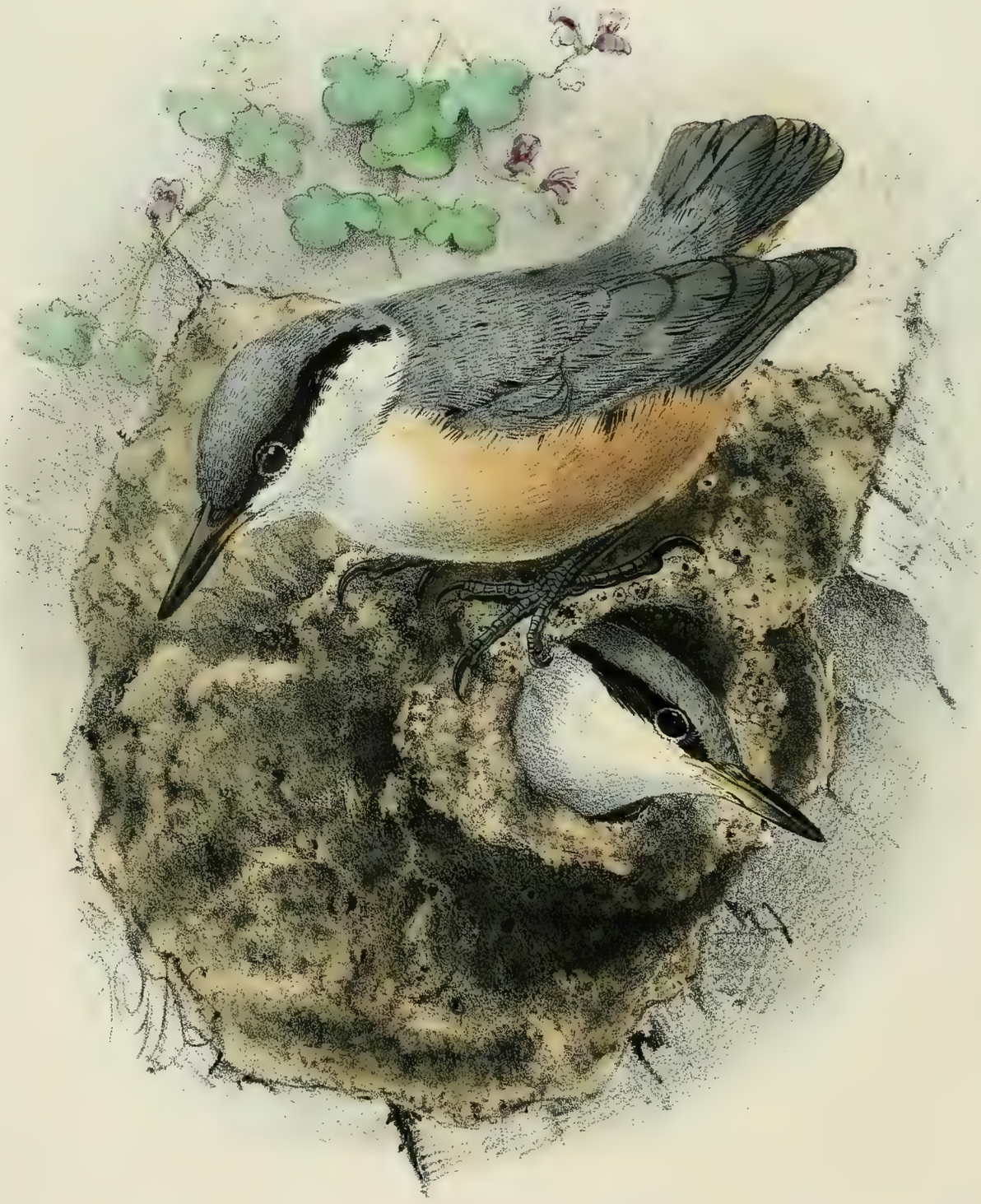
a, ♂. Mazandaran, N. Persia (*Blanford*).

E Mus. H. B. Tristram.

a. Windsor Park. *b*, ♂. Catton, Norfolk, April 13th, 1866. *c.* Ketteringham, Norfolk, March 1865. *d.* Near Banias, Mount Hermon, May 7th, 1864.

E Mus. J. H. Gurney, jun.

a, ♂. Ketteringham, March 1865. *b*, ♀. Catton, Norfolk, April 13th, 1866.



SYRIAN NUTHATCH.

SITTA SYRIACA.

124.

SITTA NEUMAYERI.

(SYRIAN NUTHATCH.)

Sitta neumayeri, Michah. Isis, 1830, p. 814.
Sitta syriaca, Ehrenb. in Temm. Man. d'Orn. iii. p. 286 (1835).
Sitta rupestris, Cantr. in Temm. Man. d'Orn. iii. p. 287 (1835).
Sitta rufescens, Gould, B. of Eur. iii. pl. 235 (1832).
Sitta saxatilis, Schinz, Eur. Faun. i. p. 266 (1840).

Figuræ notabiles.

Werner, Atlas, iii. *Anisodactyles*, pl. 1; Bonap. Faun. Ital. Ucc. pl. 3. fig. 2; Gould, B. of Eur. iii. pl. 235; Fritsch, Vög. Eur. taf. 23. fig. 18.

♂ *ad.* suprà schistaceo-cinereus: lineâ nigrâ à rostri ortu per oculum ductâ et utrinque usque ad occiput extensâ: genis, facie et collo lateralibus et gutture toto sericeo-albis: tectricibus alarum dorso concoloribus, majoribus exterioribus nigris: remigibus nigricantibus, secundariis extùs dorsi colore lavatis ad apicem ipsum angustissimè albido limbatis, secundariis dorsalibus dorso concoloribus: caudâ nigricante, suprà cinereo lavatâ, rectricibus versùs apicem angustè fulvescente limbatis, exterioribus intùs fulvescente notatis: corpore reliquo subtùs fulvescenti-albo, abdomine cum subcaudalibus, tibiis et corpore laterali pallidè ferrugineis: subalaribus nigris, imis albicantibus: rostro corneo, mandibulâ basin versùs flavicante: pedibus plumbeis: iride saturatè brunneâ.

♀ mari similis.

Juv. similis adultis, sed multò pallidior, suprà paullò cinerascens.

Adult Male. Entire upper parts lead-blue, rather darker on the forehead; loral space and a broad line passing through and beyond the eye to the nape black; quills bluish brown slightly edged with russet, as are also the larger wing-coverts; tail blackish brown, the two central feathers being, however, lead-blue, the outermost feathers on each side having a russet spot at the tip of the inner web, and the outer web at the base slightly edged with the same colour; cheeks, throat, auriculars, and entire underparts white, tinged with russet on the abdomen, this tinge being more conspicuous on the flanks and the lower portion of the abdomen; thighs pale russet; under tail-coverts pale russet, each feather having a large central mark of dull bluish grey; bill horn-colour; under mandible much lighter at the base and to two thirds of its length; legs lead-grey; iris dark brown. Total length 5·6 inches, culmen 0·8, wing 3, tail 2, tarsus 0·9.

Female. Similar to the male, but generally somewhat larger in size. One obtained by Dr. Krüper in Macedonia in November 1869 measures 5·4 inches in length, wing 3·25, tail 2·1, culmen 0·95, tarsus 0·95.

A female from Kokand differs in being much lighter in colour than specimens from Asia Minor; and the stripe behind the eye is larger, extending 1½ inch from the eye; and the secondaries and wing-coverts are indistinctly edged with rufous. In this specimen the culmen measures 1 inch, wing 3·5, tarsus 1·05.

This, however, is in all probability an unusually large bird, as two others from the same locality measure as follows:—culmen 0·95 and 1 inch, wing 3·3 and 3·5, tail 2·2 and 2·4, tarsus 0·98 and 1, one being in general size apparently smaller than the specimen from Macedonia above referred to.

Young. Differs from the adult in being rather duller in colour.

This Nuthatch, which might from its habits be justly called the Rock-Nuthatch, is strictly a southern species, ranging throughout Southern Europe into Afghanistan. It has not been recorded from the south of France; but Mr. Howard Saunders met with it in Spain, and writes as follows:—"When searching for the breeding-place of *Cotyle rupestris* near Archena, I saw both this bird and its unmistakable nest; but it was perfectly impossible to get near its haunts with a gun, and it would not come down to me. With great difficulty, and after a most agonizing climb over the sharpest of rocks, I got within a few yards of the nest; but there was a chasm between me and the desired prize which nothing without wings could pass."

It has not been observed in Italy; and its occurrence in Sicily rests upon the uncorroborated evidence of Malherbe; Salvadori considers that the specimen figured by Bonaparte in his 'Fauna Italica' really came from Dalmatia. In Greece it is common; and, according to Lindermayer, it is resident there, frequenting the rocks, and never seen on a tree. It is said not to occur on the Cyclades; but Lord Lilford met with it on the Ionian Islands, and writes that it is "common in certain suitable localities in Epirus, particularly amongst the stony and precipitous hills near Santa Quaranta, where I have frequently observed it in small parties of five or six, flitting about and busily examining the holes and crevices of the rocks. It is a lively and restless bird, and has a note entirely different from that of the Common Nuthatch (*Sitta cæsia*). I never observed this bird to perch on a tree or shrub, but almost invariably found them on the most exposed and barren hill-sides."

Fritsch records it from Montenegro; and Professor von Nordmann observed it in several parts of Abasia and Ghouriel, climbing about the rocks, and thinks that it is also found in the Crimea. Dr. Radde, who has lately visited us, assures us that he often heard its note in the Caucasus, and hopes soon to be able to procure and send us specimens from there. Canon Tristram met with it in the hill country of Judæa and in the Wady Hamam, where, however, it is scarce and local, always, however, attracting attention by its restlessness and loud call. In the grand gorge of the Leontes he found it particularly abundant. Further south than Asia Minor and Palestine we do not hear of this Nuthatch; but to the eastward it extends into Afghanistan, where, according to Mr. Blyth, it is a common species.

In its habits, and especially in its mode of nidification, the Syrian Nuthatch differs widely from *Sitta cæsia* and *Sitta europæa*. Unlike those species, which are always found on trees, this bird frequents the barren rocks, never, so far as we can ascertain, going on to a tree; and instead of plastering up a suitable hole, like our Common Nuthatch, it builds a nest of mud formed like that of a Swallow, but closed up excepting the funnel-shaped entrance. Our friend Dr. Krüper has published some most interesting notes respecting the habits and nidification of this bird in Greece, from which we translate the following extracts:—"During the first few weeks of my stay in Greece I was not sufficiently well acquainted with the notes of the birds found there to know each species at a distance by its call-note or song. When I came near a

rocky place I heard various notes, and at first could not say by which bird they were uttered, until I saw a Blue Rock-Thrush singing on a rock. On my later excursions I put down all the singing that could be heard at a great distance as being that of this bird, as I could never see the songster. When searching for nests of *Hirundo rufula* I found, on the 24th of May, 1858, on the face of a rock a portion of a nest formed of earth, small stones, dung, &c., such as I had hitherto never seen, and which I thought must be the nest of a Blue or a Rock-Thrush, although I recollected afterwards that these species build a nest of grass-straws. Later than this, on the 14th of June, I heard, when beyond the Ætolian Klissura, a very loud note, and observed a Nuthatch climbing about the rocks; and about half an hour's walk further on I found in a cave a finished nest, of the same materials as the fragment above referred to, which was fastened to the rock, and at about three fourths of its height had a round funnel entrance about one inch long. With a sharp knife I cut away sufficient of the crust to get my fingers in, and I then found five eggs, which showed me who the owner of the nest was, as I was already well acquainted with the eggs of this species."

Dr. Krüper gives particulars of the taking of several other nests, all of which were similar in construction to the one above referred to. He states that this Nuthatch sometimes lays ten eggs, though eight or nine is the usual complement. The female sits so close that she may generally be taken on her eggs. The Syrian Nuthatch has a passion for building nests, and will, according to Dr. Krüper, often build one and not make use of it for the purpose of depositing its eggs, but will build another. He states that in one nest he had cut a hole in order to ascertain its contents; and on revisiting the place a few days after, he found that the old birds had not closed the hole thus made, but had attached another funnel-shaped entrance, and thus the nest had two separate entrances. Von der Mühle says that the nest of this species has an entrance *eleven* inches long; but this assertion is disproved by Dr. Krüper, who says that the entrance-funnel is generally about 1, and never more than 2 inches long. Both Von der Mühle and Krüper remark that the hard wing-coverings of beetles (*Lydus algericus*, *Chrysomela fulminans*, &c.) are often fastened on to the nest with the earth of which the nest is constructed.

To our friend Mr. H. Seebohm, whose notes on *Sitta krueperi* we published in our last part, we are also indebted for the following notes:—

"The mountains around Smyrna generally dip into the flat valleys with a precipitous limestone cliff, frequently ending in a steep slope of rocky débris, in which many shrubs, especially the oleander and a dwarf oak, struggle for existence. As you approach this border land, which divides the vineyards from the mountains, the first birds you are likely to see are the Russet and Black-eared Wheatears (*Saxicola stapazina* and *S. aurita*), and the first bird you are likely to hear is the Syrian Nuthatch (*Sitta neumayeri*). In these localities the latter bird appears to be common. At Burnabat it was one of the commonest birds, ranging from the foot of the cliff to nearly the top of the rocky hills. If I remember right, Dr. Krüper took above a score nests in that neighbourhood in one week in the spring of 1872. We made an expedition together to a little village among the hills north of Menimen in search of the nests of the Rose-coloured Pastor. We learned that they had bred there in hundreds the year previous; but we could not discover a trace of them; so we sat down to lunch by an old fountain under the shade of a mulberry-tree. Half a dozen or more Lesser Kestrels were on the wing; a Roller was busy

feeding her young, which were safely housed in a hole under the roof of a cottage close by; and on the rocks behind the mulberry-tree several pairs of the Syrian Nuthatch were within a few yards of us. Their loud and shrill notes were constantly to be heard. They seemed to confine themselves exclusively to the rocks; and we never saw one alight, even, on the trunk of a tree. If not so active as a Titmouse, they are certainly quite as much at home on their feet. Their mode of progression seems to be by a succession of little jerks; and it appears to be immaterial to them whether their road be horizontal or perpendicular. They will run up the side of a rock, turn round, and run down again with the greatest ease. They will often take wing, flitting from rock to rock in search of their insect food, as a Titmouse does from tree to tree. They breed in caves and recesses of old ruins. Behind the village of Nymphion was a magnificent mountain-gorge, not unlike Dovedale in Derbyshire, or Yordale Scar in Yorkshire. The rocks appear to be mountain limestone, fantastic in shape, full of caves and hollows, and forming, as the tourists say, 'a romantic valley,' or rather cluster of valleys. Dr. Krüper and I made many exploring raids into this valley. There were generally a pair or two of birds of prey to be seen on the wing. The Griffon and Egyptian Vultures were generally noticed, and sometimes the Imperial, Spotted, Booted, or Short-toed Eagle. In the caves we sometimes found the nest of the Daurian Swallow, and once that of the Rock-Martin, and very often that of the Syrian Nuthatch. The nest of this bird is a very curious structure. A recess in the rock is selected, and a funnel, made of mud and little bits of dry grass, is built in front of it. It is quite an important affair: the base is frequently twenty-four inches in circumference; and the walls vary in thickness from half an inch to an inch and a half. The tube of the funnel, which of course serves for the ingress and egress of the bird, is about four inches long, with an internal diameter of an inch and a quarter at the entrance. The outside of the nest is carefully made to resemble the appearance of the rock against which it is built. One which I brought home with me is curiously corrugated or granulated to imitate the calcareous deposit on the inside of the cave where I found it. The nest is warmly lined with goat's wool, thistle-down, and all sorts of soft material. As might be expected in a bird which remains in its summer home during the winter, it is an early breeder, laying its eggs about the middle of April; and it would not appear to breed a second time in the year, as all the nests I found in June were empty. The number of eggs varies from six to ten. They are very beautiful, well marked, and unlike any other egg with which I am acquainted. The typical egg is about the size of the egg of our Wryneck, but rather wider, and flatter at the top, and straighter at the sides. It has the same pearly white ground-colour, spotted with large rust-coloured blotches, which are chiefly in a zone round the large end, and often more or less confluent. Sometimes the spots are only minute specks; and in both cases they are sometimes sparingly distributed over the whole surface. I have several eggs which are pure white. They are also subject to great variations in size and shape. Some are scarcely larger than the egg of the House-Martin; some are long and narrow, and others short and wide."

Eggs, in Dresser's collection, of this species, collected in Greece and Asia Minor by Dr. Krüper, differ from those of *Sitta cæsia* and *S. europæa* in being larger and stouter, and having the spots larger, fewer, and scattered all over the surface of the egg. In size they measure from $\frac{33}{40}$ by $\frac{25}{40}$ to $\frac{34}{40}$ by $\frac{26}{40}$ inch. Dr. Rey writes that he has eggs from Asia Minor and Greece, some of which

resemble those of *Sitta cæsia* in shape and markings, but are distinguishable by their more glossy surface. He gives the average size of thirty-three eggs as 20·6 by 15·3, the largest measuring 22·75 by 16·0, and the smallest 19·0 by 14·25 millimetres respectively. The sittings vary from eight to ten eggs in number, and were taken from the 4th of April to the 21st of May.

The specimens figured and described are in Dresser's collection, and were obtained by Dr. Krüper near Smyrna, where the nest which we have figured was also procured.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Near Smyrna, June 10th, 1871. *b*, ♂ *juv.* Near Smyrna, June 8th, 1863. *c*, ♀ *juv.* Smyrna, July 10th, 1871. *d*, ♀ *ad.* Olympus, Macedonia, November 11th, 1869 (*Dr. Krüper*). *e*, ♀. Kokand, April 16th, (*Dode*).

E Mus. H. B. Tristram.

a, *b*. Mount Taygetus. *c*. Gorge of the Leontes (*H. B. T.*). *d*. Mount Hermon (*H. B. T.*). *e*. Mount Kakatao, Kokand (*Dode*).

E Mus. Lord Walden.

a, ♀. Central Asia (*Dode*).



KRÜPER'S NUTHATCH.

SITTA KRUEPERI.

SITTA KRUEPERI.

(KRÜPER'S NUTHATCH.)

Sitta krueperi, Von Pelz. Sitz. kaiserl. Akad. Wissensch. Wien, xlviii. Abth. i. p. 149 (1863).

Figura notabilis.

Sclater, Ibis, 1865, pl. vii.

♂ *ad.* suprà cinereus: lineâ angustâ frontali et supercilio cum facie laterali et gutture toto sericeo-albis: pileo antico nigro: tectricibus alarum dorso concoloribus: remigibus cinerascenti-brunneis, primariis extùs distinctè cano limbatis: caudâ nigrâ, ad apicem albicante aut cinerascente: subtùs dilutè cinereus, abdomine et subcaudalibus pallidè rufescentibus: torque pectorali lætè castaneo: cruribus albis: rostro corneo: pedibus plumbeis: iride brunneâ.

Juv. multo pallidior et sordidior: torque pectorali multo pallidiore, et fronte nigrâ absente.

Male adult. Above slaty grey; forehead from the base of the beak to the centre of the head glossy black; wing-coverts the same as the back; quills brown, with a slaty tinge; the two central tail-feathers slaty grey, the others being black extensively tipped with grey; lores, and an indistinct line passing through and behind the eye, blackish; cheeks, throat, and sides of head pure white; on the fore part of the breast a large, irregularly crescent-shaped patch of a rich chestnut-red; underparts otherwise dull slaty grey, the feathers round the vent and the under tail-coverts being marked with rust-colour; under wing-coverts slaty grey; bill dark horn, lighter at base; legs slate-grey; iris brown. Total length 4·1 inches, culmen 0·6, wing 2·9, tail 1·5, tarsus 0·65.

Female. Similar to the male.

Young. Similar to the adult, except that it is much duller in colour, and the breast is dull rufous instead of being rich red as in the adult, added to which it lacks the black frontal mark.

This beautiful and very distinct species of Nuthatch is as yet only known to inhabit Asia Minor and Palestine. It was first discovered by our friend Dr. Krüper, and described by Herr von Pelzeln. Dr. Krüper informs us that it is by no means a rare species near Smyrna. It differs materially from *Sitta cæsia* and *Sitta europæa* in its mode of nidification; for instead of plastering up a hole already formed, it hacks out a fresh round hole in a rotten branch or trunk of a tree, and uses no plaster whatever. "On the 8th of May last" (1871), writes Dr. Krüper, "I found three nests, and cut an entrance into one through the rotten wood at the back of the tree, but found no eggs in it. On the 18th of May I revisited this nest, and took out of it five very slightly incubated eggs. The second nest was forsaken; and the third contained young birds. This species appears to raise only one brood in the year." Canon Tristram includes it in the fauna of Palestine, his notes on the subject being as follows:—"Mr. Sclater has rightly corrected me (Ibis, 1865, p. 309) for the statement that the bird we procured south of Hermon

was *Sitta krueperi*; but now possessing two of Dr. Krüper's specimens, I feel confident that I frequently saw this little Nuthatch in the Leontes gorge. I shot them, but was unable to recover the specimens in that tremendous depth. But I saw them closely enough to identify the chestnut collar; and Mr. Cochrane took a nest in this place, which he kindly shared with me, the eggs of which are only half the size of those of our Common Nuthatch, and doubtless belong to this species."

Our friend Mr. H. Seebohm has lately returned from Asia Minor, where he has been collecting with Dr. Krüper; and to him we are indebted for the following excellent note respecting this bird:—"Dr. Krüper introduced me to the Nuthatch which bears his name during my visit to him in Asia Minor in June 1872. I found him residing in a charmingly picturesque house in the little village of Ninfi or Nymphion, five and twenty miles over the mountains east of Smyrna.

"A few miles beyond Burnabat you cross a mountain-pass into the valley of the Nymph, by an old road said to have been made by the great Tamerlane to bring his army down, now most like a deserted river-bed, traversed principally by the ass and camel, and luxuriant with oleanders, which were in full bloom. The valley is almost a dead flat. As far as the eye can reach are miles upon miles of vineyards, interspersed with olive-, mulberry-, almond-, fig-, and pomegranate-trees, with a few pines, with here and there a field of wheat, tobacco, Indian corn, or cotton. On each side of the valley is a range of lofty hills, very rocky, full of caves, apparently mountain-limestone, and sparingly planted here and there with pines. The pines in the valley are often in the possession of a colony of Spanish Sparrows, and sometimes a Woodchat Shrike forsakes his favourite olive-tree and breeds among the Sparrows. The pines on the mountains, on the other hand, are the favourite resort of the Great, Blue, and Sombre Titmouse and of Krüper's Nuthatch.

"Krüper's house was built on the slope of the mountains. From his balcony we looked on to the roofs of the rest of the houses. Upon these red-tiled roofs we could see thirteen Storks' nests, all containing young birds.

"The day after I arrived we took a long stroll on the maintain's side to a small pine-forest on a shoulder of the rocky hills. On one tree was a large nest of the Imperial Eagle tenanted by half-fledged birds. In a hole in a dead or dying stump a Middle Spotted Woodpecker was rearing her young bird; and flitting from pine to pine, like Titmice, were two pairs of Krüper's Nuthatch. We sat down on an old pine-stump and watched them through a pocket-telescope. The deep-chestnut ring on the breast was very distinct below the almost white throat. They were most active little birds, with all the habits of our Nuthatch or Creeper, and having apparently little affinity to the Syrian Nuthatch, which we had seen, I may almost say by scores, on the rocks as we ascended the hill. They seemed to be very partial to the pine-cones, running up and down and round them in every direction. Krüper pointed out to me a hole in a branch of a pine some twenty feet from the ground, from which he had taken the nest, containing five eggs, a week or two before.

"The following day we visited another clump of pines, where Krüper knew of a nest containing one egg, and which he hoped by this time might contain more. In this we were disappointed. The nest was forsaken. It was at an elevation of not more than four feet, in

the stump of a pine which had been cut down some five feet from the ground. In the stump was a hole, no doubt caused by a decayed branch; in this hole was the nest. Like the nests of many of the Tits, it seemed to be all lining, a little dry grass, thistle-down, and goat's hair, a few feathers, and quantities of the wing of the pine-cone seed, which is doubtless their favourite food. There was no appearance of the entrance of the hole having been in any way plastered with mud, as is usually the case with the nest of our Nuthatch. The birds themselves were flitting about in the pine-trees as active as ever, having apparently given up all ideas of rearing a family this season. We watched them for some time. Like the Syrian Nuthatch they have a variety of notes; one reminded me of the common call-note of the Canary, whilst another was not unlike a well-known monotonous note of the Great Tit, but more guttural.

"A few days afterwards we met with several of these interesting little birds among the pines in a rocky gorge, two thirds of the way up the mountains. It was a broiling hot day, and we were glad enough to lay down and watch them flying from tree to tree. They were by no means uncommon; and it is somewhat remarkable that such a perfectly distinct species should have remained so long undescribed."

In Dresser's collection are two eggs obtained from Dr. Krüper, taken out of the above-referred-to nest on the 18th of May, 1871. In size these eggs measure $\frac{27}{40}$ by $\frac{21}{40}$ inch, and somewhat resemble eggs of *Parus major*, but are rounder in shape. They are pure white, spotted (chiefly at the larger end) with bright red spots. Mr. Seebohm has shown us two eggs obtained by him near Smyrna, which are exactly similar to the above-mentioned specimens; but one is somewhat brighter-coloured, being almost as richly marked as eggs of the Creeper.

The descriptions and figures in the accompanying Plate are those of an old and young bird in Dresser's collection, killed by Dr. Krüper himself on the 2nd and 21st of June, 1871, in the neighbourhood of Smyrna. We have also examined a very richly marked bird in Mr. Seebohm's collection, which, however, he informs us, is an unusually bright specimen, and therefore should not be described as a typical bird.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, ♂, ♂ *juv.* Smyrna, June 2nd and 21st, 1871 (*Dr. Krüper*).

E Mus. H. B. Tristram.

a. Smyrna, December 23rd, 1871 (*Dr. Krüper*).

E Mus. H. Seebohm.

a, ♀ *ad.* Near Smyrna, February 16th, 1872 (*Dr. Krüper*).

Family CERTHIIDÆ.

Genus CERTHIA.

Certhia, Linnæus, Syst. Nat. i. p. 184 (1766).
Motacilla apud Ström, Trondh. Selsk. Skr. 1770.

Most authors agree in placing the Creepers next to the Nuthatches, where, indeed, they appear to fit in most naturally; but Keyserling and Blasius arrange them far from the Nuthatches, making one group of them and the Wrens, which they place between the Starlings and the Dippers.

The genus is found throughout the Palæarctic, the northern part of the Oriental, the Nearctic, and the northern part of the Neotropical Regions, one species only being found in the Western Palæarctic Region.

In habits the Creepers are active and lively, and appear to be almost always on the move, searching for insects amongst the crevices of the bark of trees, up which they ascend spirally, clinging to the bark with their strong feet, progressing by short starts, supporting themselves by pressing their stiff tail against the bark. They feed on insects, larvæ, &c., and are often seen moving about in company with Titmice and other small birds. They build a rather deep nest of straws or fibrous roots lined with feathers, which is placed behind a loose piece of bark or in a bundle of peasticks or some other convenient place, and deposit small white eggs spotted, chiefly at the larger end, with light red.

Certhia familiaris, the type of the genus, has the bill long, slender, curved, tapering to a sharp point; nostrils oblong, basal, exposed; wings long, rounded, the first quill short, the second shorter than the seventh, the fifth longest; tail long, the feathers slightly arched, stiff, and pointed; tarsus slender, covered in front with four indistinct plates and three inferior scutellæ; feet large, compressed, hind toe very large, claws long, arched, pointed, laterally grooved; plumage soft and blended.



TREE CREEPER.

CERTHIA FAMILIARIS.

242

CERTHIA FAMILIARIS.

(COMMON CREEPER.)

Certhia familiaris, Linn. Syst. Nat. i. p. 184, "Europe" (1766).
Certhia fusca, Barton, Fragm. Nat. Hist. Pennsylv. p. 11, "N. America" (1799).
Certhia scandulaca, Pall. Zoogr. Rosso-As. i. p. 432, "Russia and Siberia" (1811).
Certhius major, Frisch, Vög. Teutschl. fol. B, taf. 39, "Germany" (1817).
Certhius minor, Frisch. loc. cit. "Germany" (1817).
Certhia macrodactyla, C. L. Brehm, Vög. Deutschl. p. 208, "Central Germany" (1831).
Certhia septentrionalis, C. L. Brehm, tom. cit. p. 210, "North Germany" (1831).
Certhia brachydactyla, C. L. Brehm, tom. cit. p. 210, "Saalthal, Germany" (1831).
Certhia megarhynchos, C. L. Brehm, tom. cit. p. 211, "Western Germany" (1831).
Certhia nattereri, Bp. Comp. List, p. 11, "Dalmatia" (1838).
Certhia americana, Bp. tom. cit. p. 11, "Western and Northern America" (1838).
Certhia costæ, Bailly, Bull. Soc. Hist. Nat. de Savoie, January, "Savoy" (1852).
"*Certhia mexicana*, Gloger," Reichenb. Handb. i. p. 265, "Mexico" (1853).
Certhia brachyrhynchus, L. Brehm, Naumannia, 1855, p. 274.
Certhia paradoxa, L. Brehm, ut suprà.
Motacilla scolopacina, Ström, Trondh. Selsk. Skr. (1770), fide Collett, Norg. Fugl. p. 16, "Norway" (1868).
"*Certhia rufidorsalis*, Br." Giebel, Thes. Orn. i. pp. 615, 618 (1872).
Certhia hodgsoni, Brooks, Journ. As. Soc. Beng. 1872, p. 73, "Kashmir."

Creeper, *Tree-creeper*, *Tree-speeler*, *Brown Woodpecker*, English; *Snaigear*, *Meanglan*, *Streapach*, Gaelic; *Grimpereau familier*, French; *Trepadevia*, *Atrepa*, Portuguese; *Trepatroncos*, *Arañero*, Spanish; *Rampichino*, Italian; *Baumläufer*, German; *het Boomkruipertje*, Dutch; *Trœpikker*, *Trælöber*, Danish; *Trädkrypare*, Swedish; *Trækryber*, Norwegian; *Puuküpiä*, Finnish; *Pishchuha Sverchok*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 631. fig. 1; Werner, Atlas, *Anisodactyles*, pl. 2; Frisch, Vög. Teutschl. taf. 39; Fritsch, Vög. Eur. taf. 25. figs. 19, 20; Naumann, Vög. Deutshl. taf. 140. figs. 1–4; Sundevall, Sv. Fogl. pl. ix. fig. 2; Kjærb. Orn. Dan. taf. x.; Gould, B. of Eur. pl. 237; id. B. of G. Brit. ii. pl. 64; Schlegel, Vog. Nederl. pl. 63; Roux, Orn. Prov. pl. 239; Bettoni, Ucc. Lomb. tav. 88; Baird, B. of N. Am. pl. 83. fig. 2.

Ad. capite et collo suprà saturatè fuscis albido striatis: dorso et scapularibus ferrugineo-fuscis albido maculatis: uropygio ferrugineo: remigibus nigro-fuscis ochrascente brunneo vel albido fasciatis, omnibus, quatuor extimis exceptis, albido apicatis: rectricibus ferrugineo-brunneis: supra oculum striâ albidâ, facie laterali fusco albido striatâ: corpore subtus pulcherrimè albo, crisso et hypochondriis pallidè

ochrascente ferrugineo lavatis: rostro brunneo, subtùs albido, apice fusco: iride fuscâ: pedibus pallidè fuscis.

Adult Male (Surrey, May). Head above, nape, and the fore part of the back dark brown, streaked with dull whitish or light ochre, the centre of each feather being of that colour; head darkest, and having the streaks narrowest; back duller in colour, and having broader streaks; centre of the back yellowish brown, becoming yellowish rust-coloured on the rump, the streaks becoming fainter towards the lower part of the back; scapulars dull yellowish brown, streaked with dirty white; wings dark brown, barred with pale yellowish brown or dirty yellowish white, all the quills, except the first five, tipped with dull whitish; wing-coverts tipped with yellowish white; tail-feathers stiff and pointed, dull reddish brown, lighter on the margins, their shafts dull yellowish brown; over the eye a light streak; sides of the head similarly coloured to the crown; entire underparts silvery white, on the vent and flanks washed with pale rusty yellowish; bill slender, long, and curved, dark brownish horn in colour, lighter at the base of the lower mandible; legs light brown; iris brown. Total length about 5 inches, culmen 0·7, wing 2·5, tail 2·45, tarsus 0·65, middle toe with claw 0·65, hind toe with claw 0·65.

Female. Similar to the male.

Nestling (West Drayton). In general character resembling the adult bird, but has the upper parts dull dark brown, spotted with pale yellowish, and faintly shaded with rusty yellowish; bill very short, and almost straight; underparts greyish white, duller on the vent and flanks.

The Common Creeper, or Tree-creeper, as it is frequently called, is found throughout the Palæarctic and Nearctic Regions, being generally distributed, in suitable localities, in all Europe, Northern Africa, Asia, and North America, there being in Central America a somewhat modified form, which might almost be separated as a distinct species.

In Great Britain it is generally distributed throughout the country wherever there are woods, and is a resident, though during the autumn and winter it wanders to some distance from its breeding-haunts. It does not, however, occur on the outer Hebrides; and speaking of its range in Scotland Mr. R. Gray writes (B. of W. of Scotl. p. 193), "this familiar, yet unobtrusive bird (the *bark-speeler* as it is called in North Britain), is found in limited numbers throughout all the western counties, but is wholly absent from the Outer Hebrides. Nor have I been able to trace it satisfactorily, even as a visitant, to any of the inner islands. It is, however, occasionally found in Orkney. It is very common in the woods near Glasgow; and I have frequently seen it in the outskirts of the city in clumps of smoked fir trees—the melancholy remains of woods that have yielded to the invasions of house-building."

In Ireland it is resident, being found in districts in which old wood prevails; and Thompson (B. of Irel. i. p. 344) says that "in the woods of the counties of Down, Antrim, and Fermanagh this bird has occurred to me. It is found in the north of the county of Donegal, about Dublin and Youghal, is common in some parts of Westmeath and Killaloe, in Tipperary and Kerry. Mr. Poole remarks that the Creeper is not uncommon in the wooded parts of the county of Wexford."

In Norway, according to Mr. Collett, it is common in all the lower conifer-woods, at least as high up as the Trondhjems-fiord, where it is common in Örkedal and Börsen. In the Chris-

tiania district it is common in Nedernæs, but rare on the west coast, where it is only observed now and then during migration.

In Sweden it ranges rather further north than the Nuthatch; and Sundevall (Sv. Fogl. p. 95) says that it occurs as high as Medelpad, in 62°–63° N. lat., and is common near Gefle and in Upland, Nerike, and the southern part of Dalecarlia; to which I may add that I frequently saw it near Gefle, and not far from Upsala. In Finland it is found, Von Wright says, almost all over the country, and is common at Kuopio. I have seen it once or twice in Southern Finland, where it does not appear to be common; and it is said to be somewhat rare near St. Petersburg. Mr. Meves found it at Peterhoff, Andoma, and Kargopol, where, he says, it was not very rare; and Mr. Sabanäeff informs me that it is found throughout Central Russia, but is not common. In the Ural he met with it as far as Pavada; but it was not observed on the south-eastern slopes during the breeding-season. On the western slope of the Ekaterinburg Ural it is very common in the fir-growth.

It occurs in Poland and the Baltic Provinces, and is a resident throughout North Germany, wandering about during the autumn and winter months. Borggreve states that it is not so common in the conifer-woods in Eastern as in Western Germany. In Denmark it is tolerably common in the wooded districts, and is also found in some localities which are less thickly covered with tree-growth.

In Belgium, Holland, and France it is resident, and tolerably common in wooded districts. The French naturalists look on the form which inhabits the low lands as distinct from that inhabiting the mountain-forests; but I have carefully compared specimens from various parts of Europe and am unable to detect any specific character on which to base a second species. In Portugal it also occurs; and Dr. Rey saw it when collecting there; but I am unable to state whether it is common or not. In Spain, however, it is resident, and common in suitable localities.

Passing eastward, again, I find it recorded by Bailly as found in the mountains of Switzerland, Savoy, and the Basses-Alpes; and Salvadori says that it is common throughout Italy, it being also, according to Doderlein, numerous throughout the wooded portions of Sicily. Captain Sperling found it common in the olive-woods at Corfu; and in Greece, according to Lindermayer, it is resident in the Peloponnesus, Rumelia, and on the island of Eubœa, and breeds in Akarnania and Northern Greece, but does not occur on the islands of the archipelago. In South Germany it is common. Fritsch says that it frequents the woods, gardens, and trees planted by the roadsides. Mr. Stejneger speaks of it as being numerous in the Tyrol; and I have myself met with it in the oak woods of Styria, Bosnia, Lower Austria, Hungary, Servia, and Wallachia, and have specimens from Turkey collected by Mr. Robson. Von Nordmann states that it is numerous throughout the year in the wooded districts bordering the Black Sea, but it only makes its appearance in the gardens on the steppes during the winter season. Mr. H. Goebel also records it (J. f. O. 1871, p. 131) as common in the Uman district in Southern Russia, where he has found it breeding. I do not find it recorded from North-east Africa; but Major Loche speaks of it as being numerous in the wooded districts of Algeria, where it breeds, while Mr. L. Taczanowski says (J. f. O. 1870, p. 40) that he met with it in the pine- and cedar-woods of Algeria, where it was not plentiful. Colonel Irby informs me that he met with a single specimen at

Tangier in April that year, which, he says, is the only recorded instance of its occurrence in that country.

To the eastward the Common Creeper occurs as far as Japan. It was not met with in Persia by Mr. Blanford and Major St. John; but it inhabits Kashmir, where Dr. Jerdon found it common in most of the elevated forests, and it was likewise met with by Mr. Brooks, who described the bird from that locality as a distinct species, under the name of *Certhia hodgsoni*. According to Mr. Blyth, Mr. Gould has an example of our European Creeper from the Western Himalayas, presented to him by the person who shot it. It occurs in the Amoor country, where Dr. L. von Schrenck obtained specimens. Dr. Dybowski (J. f. O. 1868, p. 336) speaks of it as rare in Darasun during migration; but Mr. L. Taczanowski, in publishing further information obtained from that gentleman, states (J. f. O. 1872, p. 353) that it is resident, though rare, in Darasun and Kultuk, and Von Middendorff obtained a specimen on the island of Aehaé, in the Sea of Ochotsk. It is found in China, being, according to Père David, a rare visitant to Peking in winter; and Mr. H. Whitely met with it at Hakodadi, in Japan, where, he says (Ibis, 1867, p. 196), it is "common in the woods and plantations."

In the Nearctic Region the Creeper is found, according to Professor Baird (N. Am. Birds, p. 126), in "the whole of North America, from the Gulf of Mexico to high northern latitudes. At different seasons it may be found in every one of the several States and Territories; yet it is never very abundant. The Smithsonian possesses specimens from various parts of the country, from Georgia to Fort Steilacoom on the Pacific; but of these none appear to have been secured during the period of reproduction. Dr. Heermann found them very common in the more mountainous districts of California. Dr. Cooper found these birds abundant in the forests of Washington Territory, but difficult to detect from the similarity of their colour to that of the bark over which they crept. They were apparently constant residents in that Territory. Dr. Suckley, who obtained several specimens of this species in the oak groves in the vicinity of Fort Steilacoom, states that in their habits the Western birds resemble those of the Atlantic States.

"Dr. Woodhouse found the Brown Creeper generally distributed throughout the Indian Territory, Texas, New Mexico, and California, and adds that it was especially abundant in the San Francisco mountains of New Mexico.

"Dr. Cooper states that he has met with this form in the winter throughout the higher mountains and among the Coast range as far south as Santa Cruz. He found them chiefly frequenting the coniferous trees, creeping up and down their trunks and branches, searching for insects in their crevices, and so nearly resembling the bark in their general colour, that they can be detected only with great difficulty, except when in motion.

"He adds that their notes are shrill and wiry, and are often heard when the bird is scarcely visible without a careful search, their cry appearing to be from a greater distance than the real performer. In March Dr. Cooper heard them giving out a faint but sharp-toned song, resembling that of a Wren. If Dr. Cooper is correct in his account of the notes, they do not correspond with those of our eastern bird.

"Dr. Kennerly, in his Report on the birds observed by him near the thirty-fifth parallel, states that he found our common Creeper very abundant among the rough-barked cedars in the Aztec Mountains. . . . .

"Mr. Ridgway found this Creeper inhabiting both the pine-forests of the Sierra Nevada, where it was the more common, and also, in winter, among the willows of the river-valleys. He did not meet with it east of the Truckee river, nor until he had reached the Wahsatch Mountains."

In Texas I found it not uncommon in the southern and south-western districts. I often noticed it on the Medina and San Antonio rivers. I have two specimens, which I shot in March; and Dr. Heermann informed me that he has found the nest of this bird near Howard's rancho, on the Medina river. These two specimens, and one from Jalapa, in Mexico, agree very closely with our European bird. The Guatemalan birds, however, differ considerably from northern examples, as well as from that obtained in Mexico. This form was found by Mr. Salvin in the pine-forests of the upper zone of the Volcan de Fuego; and he also observed it frequenting pine-trees in the district of Chilasco, Vera Paz, at about 6000 feet above the sea.

Quiet and unobtrusive in its habits, the Creeper may often be overlooked by any one not greatly interested in ornithology; but to an observer accustomed to rove through the woods its presence is made known by its low feeble note, which it utters now and again whilst busy searching for insects in the crannies of the bark, or when flitting off from one tree to recommence its search on another. Always on the move, it is a most indefatigable climber, ascending up the trunk of a tree in a spiral direction, advancing by short jerks, every now and then uttering a shrill, feeble cry, never for a moment appearing to rest, but ever busy, ever eager, seeming to hasten on so as to get through as much work in the day as possible. It climbs with the greatest facility and ease, not appearing to labour in its efforts whilst ascending a tree. It usually works upwards until it reaches the top of a tree, sometimes diverging to examine a large branch, along which it moves with ease, even though it may be horizontal and it has to move back downwards under the branch. When it has reached the summit of the tree, and thoroughly investigated the surface of the main stem and larger branches, it flits down to the lower part of the trunk of an adjacent tree and recommences its search as assiduously as ever. If followed, it is careful to keep the trunk of the tree between itself and the intruder, and knows well how to keep out of harm's way. In the winter season it consorts with the various species of Titmice and Goldencrests which wander through the woods and groves, being usually the last of the long straggling train of small birds which join together in their wanderings.

In general it commences to breed early in the season, having eggs in April or early in May, six being the number usually deposited. The nest is usually placed between the detached bark and the trunk of a large tree, a sufficient space being left in which to place the nest; but other situations are sometimes chosen. Lord Lilford (Ibis, 1866, p. 389) writes that he found a nest in the foundation of a Cinereous Vulture's nest in Spain, which was unusually deep for that of a Raptor. When discovered the Creeper's nest contained young birds.

It breeds not unfrequently in the neighbourhood of Altenkirchen, near Coblentz, on the Rhine, where, as elsewhere, it is an early breeder. Mr. Carl Sachse informed me that he has found its nest on the outside of the peasants' huts, which are built of a sort of basket-work of sticks and plastered over; and in some instances the outer shell becomes somewhat detached, leaving a narrow open space, into which the bird can enter through a convenient crack or hole. He has also taken nests in old bundles of pea-rods, and under the eaves of straw roofs, and in a

hole in a tree. The nest is usually rather compressed and deep, the eggs being well and carefully placed rather deep down in the inside cup, which is peculiarly shaped, being longer one way than the other, from the position in which it is constructed, which is usually a very narrow one. The eggs are placed in two rows of three, thus adapting themselves best to the shape of the nest. The nest itself is constructed of fine straws, and is carefully lined with feathers. I have, however, a nest from Norway which is constructed of narrow strips of the fine paper-like bark of the birch tree, and sparingly lined with feathers. The bird is exceedingly shy during the time of incubation, and leaves its eggs so soon as any one approaches within twenty or thirty paces of its nest; but otherwise the female incubates very assiduously, being fed by the male during the season of incubation. During the pairing-season the male utters a song, which is, Professor Newton says, "loud and pleasing, though not often heard, and pitched in a high, shrill key."

The food of the Creeper consists of small insects and their eggs and larvæ, which it picks out of the interstices of the bark; and it is said to occasionally vary its diet with the seeds of the Scotch fir.

I have a large series of the eggs of the present species, from England, Germany, and Norway, all of which are white in colour, spotted and blotched with reddish brown, a few smaller red dots being interspersed; and in most of these specimens the markings are collected towards the larger end. In size they vary from $\frac{23}{40}$ by $\frac{19}{40}$ to $\frac{26}{40}$ by $\frac{1}{2}$ inch. The number of eggs deposited varies from six to nine.

After a most careful examination of a series of specimens from various localities, I have found it necessary to unite with the common Creeper several species which have been described as distinct, as I cannot find any distinctive character which holds good. That there is a tendency to branch off into climatic races is undoubtedly the case, as the South-European and South-east Asiatic examples are all paler than the general run of northern specimens; but I have examined light-coloured birds (undistinguishable from those obtained in the south) from Northern Europe; and some of the southern birds are much darker than others, being almost as dark as the average northern birds. This southern variety has been described as *Certhia costæ*. The palest specimens I have examined are those from the Amoor and Japan, the latter being, however, the darker of the two. Those from Turkey, collected by Mr. Robson, differ the most *inter se*, as one is even darker than the dark-coloured northern examples, has the rump reddish yellow, and has an unusually long bill; whereas the others are light-coloured, one being quite as pale as the Japanese birds, and almost as bleached on the upper parts as the pale Amoor specimen. Two specimens from Cashmere, belonging to the variety named by Mr. Brooks *Certhia hodgsoni*, appear at the first glance somewhat different; but a critical comparison with a series shows at once that they cannot possibly be separated from our European bird. Mr. Brooks claims as specific distinctions:—1st, the much longer bill, which cannot for a moment be considered of any specific value, as the bills of specimens from all localities vary extremely, as will be seen from the table of measurements given below; 2ndly, that the upper parts are not so rufous in tone; and, 3rdly, that the spots on the head are very white, and the brown on the upper surface is almost black. To these latter I may reply that I have specimens from various parts of Europe which are absolutely identical in tone of colour with these Cashmere birds. He further

mentions that the fourth primary is marked with a buff patch in the European bird, whereas in the Cashmere bird this is not the case; but I find this by no means constant, as some of the European birds have the fourth primary marked, and others have it quite plain. The bars on the wings are very rufous in the Cashmere specimens, more so, as a rule, than in European birds; but I have one British-killed bird which has them even more rufous than either of the Cashmere examples. As will be seen from the table of measurements, the Japanese and Amoor birds have the bills much shorter than the average of western examples.

With regard to the American Creeper, which is kept separate by Professor Baird, and divided into two subspecies under the names of *Certhia familiaris*, var. *americana*, and var. *mexicana*, I cannot, after a most careful and critical examination, find any specific distinction between either of these so-called varieties and our European bird. I have specimens from Washington, North California, and Jalapa, in Mexico, from Mr. Salvin's collection, and from San Antonio, Texas, obtained there by myself, and can match any one of these in the minutest detail of coloration by some one of my European examples. Professor Spencer F. Baird says (N. Am. Birds, p. 124) that "the two European races (*C. familiaris* and *C. costæ*) both differ from all the American varieties in having the crissum scarcely tinged with yellowish;" but this statement is not borne out by my specimens, as I have European examples with the crissum washed with yellowish ochre, and others with it almost pure white. One from Hampstead has the crissum much darker coloured than in any of the American specimens before me. In Mr. Salvin's collection, however, are six specimens of a Creeper from Volcan de Fuego, in Guatemala, obtained at an altitude of from 10,200 to 12,000 feet, which agree closely *inter se*, and differ visibly from examples from North America and Europe. The upper parts are much darker, the head being blackish brown, very narrowly and slightly striated with buffy white; the rump and upper tail-coverts are rich fox-red; and the underparts, except the chin and upper part of the throat, are dirty greyish white, the crissum being dull rufous-ochre. In general coloration it bears considerable resemblance to *Certhia discolor* from Darjeeling, and has already reached a stage of difference which nearly entitles it to specific rank; indeed it is far more worthy of being described as distinct than any of the other forms or races of the present species which have been looked on by various authors as worthy of specific rank. I have, however, with Mr. Salvin carefully compared these birds with my series of Creepers from various localities; and, in spite of the differences above named, we cannot consider it sufficiently distinct to bear a separate specific title. Professor Baird refers the Guatemala bird to *Certhia mexicana*, and probably had examples from Mexico which nearly resembled it. Unfortunately I have only examined a single Mexican specimen, which, I may add, is undistinguishable from North-American examples. Thanks to Lord Walden, Captain Elwes, Mr. Swinhoe, and other gentlemen, I have had placed at my disposal for examination a fine series of Creepers from all parts of the globe where this genus is represented; and it may not be out of place to enumerate the different species as follows, the numbers used being those in Gray's 'Hand-list':—

2512. *Certhia familiaris*, L., the range of which is given above.

2513. *Certhia americana*, Bp., and

2514. *Certhia mexicana*, Reich., are both referable to *C. familiaris*.

2515. *Certhia himalayana*, Vig. (P. Z. S. 1831, p. 174), is easily distinguishable by its very distinctly barred tail and dark upper parts. It is only found in the North-western Himalayas.

2516. *Certhia nipalensis*, Hodgson (J. A. S. xiv. p. 580), very closely resembles *C. discolor*, but differs in having the flanks and lower tail-coverts ferruginous, and the underparts generally greyer; the head and back are also darker and less rufous in colour; the rump, however, is much more rufous in tinge. It is found, according to Jerdon, in Nepal, and on some of the higher mountains of Sikkim.

2517. *Certhia discolor*, Blyth (J. A. S. xiv. p. 580), approaches nearest to *Certhia familiaris*, but may be at once distinguished by its much longer tail. It has the upper parts dark, and the upper tail-coverts very rufous, and, except for its long tail, very closely resembles some of the Guatemalan specimens collected by Mr. Salvin. It inhabits Sikkim.

Of *Certhia himalayana* I have examined four specimens in Lord Walden's collection, one in that of Captain Elwes, and one in my own collection; of *C. nipalensis*, one in Lord Walden's, and one in Captain Elwes's collection; and of *C. discolor*, four in the collection of Lord Walden, and one in that of Captain Elwes.

The following Table will show the measurements of the various species of Creepers I have been able to examine:—

		Culmen. inch.	Wing. inches.	Tail. inches.	Tarsus. inch.
Certhia familiaris	England.	0·7	2·45–2·5	2·45–2·7	0·65–0·69
,, ...	Denmark.	0·65	2·5	2·6	0·63
,, ...	Spain.	0·72–0·8	2·3 –2·45	2·2 –2·3	0·6 –0·62
,, ...	Italy.	0·75	2·35	2·4	0·68
,, ...	Asia Minor.	0·7	2·37	2·45	0·6
,, ...	Kashmir.	0·65–0·82	2·32–2·5	2·38–2·5	0·65–0·67
,, ...	Japan.	0·62–0·65	2·34–2·38	2·25–2·6	0·63–0·65
,, ...	Amoor.	0·67	2·33	2·45	0·6
,, ...	Washington.	0·6	2·4	2·55	0·55
,, ...	Texas.	0·72	2·45	2·5	0·6
,, ...	Mexico.	0·65	2·55	2·75	0·6
,, ...	California.	0·8	2·55	2·55	0·6
,, ...	Guatemala.	0·72	2·6	2·65	0·55
Certhia himalayana . . .	Simla.	0·75–0·81	2·55–2·62	2·65–2·68	0·65–0·7
Certhia discolor	Darjeeling.	0·78–0·83	2·65–2·83	3·18–3·25	0·71–0·78
Certhia nipalensis	Sikkim.	0·73	2·4 –2·7	2·6 –2·85	0·68–0·7

The specimens figured and described are both in my own collection, and were obtained in Great Britain, particulars as to locality being given above.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Surrey, May 1865. *b*. Hampstead, September 1870 (*Davy*). *c*. Hampstead (*Davy*). *d*, *e*, *juv*. West Drayton, June 1870. *f*. Jutland, Denmark, May 1870. *g*. Piedmont, March 1870 (*Salvadori*). *h*, ♀. San Antonio, Texas. *i*. San Antonio, Texas, March 20th, 1864 (*H. E. D.*).

9

E Mus. Lord Walden.

a. Asia Minor, March 1st, 1864 (*Robson*). *b*, ♂. Asia Minor, March 19th (*Robson*). *c*, ♂, *d*. Kashmir. *e*, ♀. Hakodadi, April 15th, 1865. *f*, ♀. Hakodadi, October 20th, 1865.

E Mus. Salvin and Godman.

a, *b*, *c*, *d*, ♂, *e*. Volcan de Fuego, Guatemala, November 19th, 1873 (*O. Salvin*). *f*. Jalapa, Mexico (*O. Salvin*). *g*, ♂. Fort Crooke, North California (*Feilner*). *h*, ♂. Washington, D. C., February 1842.

E Mus. Howard Saunders.

a, ♂. Hampstead, November 4th, 1869 (*Davy*). *b*, *c*, ♀. Alhambra, Granada, January. *d*, ♂. Alhambra, February. *e*, ♂. Alhambra, May.

E Mus. R. Swinhoe.

a, ♂. Leiden, Holland (*Schlegel*). *b*. Peking (*David*). *c*. Hakodadi. *d*. Amoor (*Dr. Maack*).

Genus TICHODROMA.

Certhia apud Linnæus, Syst. Nat. i. p. 184 (1766).
Tichodroma, Illiger, Prodr. p. 210 (1811).
Petrodroma apud Vieillot, Nouv. Dict. xxvi. p. 106 (1818).

This genus, which contains only one species, whose range is given in the following article, is very closely allied to *Sitta* and *Certhia*, and, indeed, differs from the latter chiefly in its bright coloration and in its habits; for it frequents rocks in elevated mountain-ranges, and avoids woods, where *Certhia familiaris* is usually to be found. As that species climbs about the trees, so the Wallcreeper climbs about the rocky portions of the mountains, descending to the valleys only during the cold portion of the year. It feeds on insects of various kinds, which it procures in the cracks and crannies of the rocks.

Its nest, which is placed in a crack or hole in a rock, is bulky, and is constructed of moss and wool; and its eggs are white, very finely dotted with blackish at the larger end.

Tichodroma muraria, the type of the present genus, has the bill slender, long, much wider than high at the base, narrowing to a point at the tip; nostrils elongated, placed in the anterior part of the long nasal depression; gape without any bristles; wings very long and broad, the first quill short, the second rather shorter than the seventh; tail moderately long, even or slightly rounded; legs strong, but rather slender than otherwise, the tarsus covered anteriorly with four indistinct plates and three inferior scutellæ; toes rather long, claws strong, curved and pointed, the hind claw as long or longer than the toe.



WALL-CREEPER.
TICHODROMA MURARIA.

TICHODROMA MURARIA.

(WALL-CREEPER.)

Certhia muraria, Linn. Syst. Nat. i. p. 184 (1766).
Tichodroma muraria, Illig. Prodr. Syst. Mamm. et Av. p. 210 (1811).
Petrodroma muraria, Vieill. Nouv. Dict. xxvi. p. 106 (1818).
Tichodroma phœnicoptera, Temm. Man. d'Orn. i. p. 412 (1820).
Tichodroma europæa, Steph. Gen. Zool. xiv. p. 187 (1826).
Tichodroma subhemalayana, Hodgs. in Gray's Zool. Misc. p. 82 (1831).
Tichodroma nepalensis, Bonap. Consp. Gen. Av. i. p. 225 (1850).

L'oiseau papillon, *Parpeillon*, *Planet*, *Pic de murailles*, *Pic d'araignées*, *Grimpereau de rocs*, French (*Bailly*); *Rothflügelige Mauerklette*, Alsatian (*Krœner*); *Alpen-Mauerklette*, German; *Picchio murajola*, Italian; *Pomurnik*, Polish.

Figuræ notabiles.

Buff. Pl. Enl. 372; Roux, Orn. Prov. pl. 238; Naum. Vög. Deutschl. v. Taf. 141; Gould, B. of E. iii. pl. 239; Bailly, Orn. Sav. Atlas, iii. pl. 1. figs. 1–5; Bree, B. of Eur. iii. p. 158; Fritsch, Vög. Eur. Taf. 22. fig. 21.

♂ *ad. æstiv.* suprà cinereus, pileo paullò saturatiore, scapularibus vix roseo tinctis: uropygio et supracaudalibus nigricanti-cinereis: tectricibus alarum pulchrè coccineis, majoribus saturatioribus, nigricantibus et ad basin cinereo lavatis: remigibus nigricanti-brunneis, extùs ad basin coccineis, secundariis dorsalibus cineraceo latè lavatis: primariorum pogonio interno maculis duabus albis conspicuè notato: remigibus omnibus albido apicatis, secundariis latiùs: caudâ nigrâ cinereo terminatâ, rectricibus duabus exterioribus versus apicem albis: gutture toto et pectore antico nigerrimis: corpore subtùs reliquo saturatè cinereo, subcaudalibus albo terminatis: subalaribus coccineis, majoribus nigricante mixtis: rostro et pedibus nigris: iride nigrâ.

♀ mari similis, sed gutturis nigredine minùs extensâ.

♂ *hiem.* similis ptilosi æstivæ, sed suprà pulchrè argenteo-cinereo, pileo cinerascente: gutture toto et pectore antico purè albis, haud nigris.

Adult male in breeding-plumage. Above clear grey, a little paler on the scapulars, which are slightly tinged with rosy, the head darker grey, and the rump and upper tail-coverts deep iron-grey, almost blackish; wing-coverts crimson, the greater ones much deeper, and shading off into blackish towards the tips, grey near the base, the outermost feathers of this row of coverts blacker than the rest; quills blackish brown, the outer web conspicuously crimson near the base, all the feathers tipped with whitish, the secondaries more broadly, the latter also being shaded with ashy; the first four primaries with a double spot of white on the inner web—one near the base of the quill, and the other not far from the end; tail black, the feathers broadly tipped with grey, which inclines to white on the two outermost; sides of the face

and neck clear grey; throat and chest deep black; rest of the under surface of the body deep grey, a little paler on the upper part of the breast, the under tail-coverts being edged with white; the under wing-coverts crimson, slightly varied with blackish; bill and feet black; iris black (*Bailly*), dark brown (*Hutton*).

Adult Female. Similar to the male, but never has the black of the throat so extended, and always more bordered with white. The ashy colour of the upper parts, and the blackish grey of the under parts are clearer than in the latter. M. Caire proved this fact by the dissection of two females killed in the Basses Alpes in July 1853, both of which had the abdomen bare and eggs in the ovaries. (Bailly, Orn. Sav. iii. p. 11.)

Winter plumage. Instead of having the throat black, this part of the body is pure white; the upper parts are also of a silvery grey, and the whole tone of the plumage is brighter.

On leaving the nest, the young birds have the colours distributed as in the adults in the winter plumage, but they are always more dull, and the crimson of the wings less extended; the beak is shorter and broader at the base, quite straight till the time of the first moult—in fact, almost straight till the second year.

After moulting, the bills still remain shorter than in the adult birds, or even those of two years of age; but they resemble them in plumage, excepting in the spots on the inner web of the primaries, which are for the most part rufous, instead of being white as in the others.

The young of the previous year of both sexes do not regularly in Savoy put on the black throat in the first spring; this part always remains grey, whilst the blackish colour of the rest of the body becomes darker than in the winter plumage. Birds of this age often don this colour later in the year, in May or sometimes in the first days of June; and then they preserve a slight whitish edging to each black plume; so that the males could be easily confounded with the females, if the latter were not at this period almost white on the neck, back, and scapulars. (*Bailly*, l. c.)

Obs. This is evidently the stage of plumage described by Herr von Pelzeln, from a bird procured at Tuantse Sumbo by Dr. Stoliczka during his expedition to Thibet and the Himalayas. The same stage is represented in our own collection by a specimen from the Alps.

Obs. In his description of the adult male in breeding-plumage, M. Bailly says:—"The first three or four quills, according to the age of the bird, have two white spots; the fourth or fifth, only one; the three or four next ones are not spotted at all; but the fourth or fifth following these has a reddish patch. These spots only appear when the wings are open." The adult male which we described has two white spots on the inner web on the second, third, fourth, and fifth primaries, the markings being gradually smaller on the three latter; but it has no rufous markings whatever: a breeding bird in Mr. J. H. Elwes's collection, from Darjeeling, likewise agrees in every particular, except that it has one slight mark of white on the sixth primary. Another specimen, in winter dress, in Mr. Howard Saunders's collection, agrees capitally with Bailly's account of the markings on the wing; but a bird in our own cabinet, which bears every trace of immaturity, has a rufous spot on the inner web of all the quills; so that we may safely infer that this rufous spot is a sign of immaturity, and that it gradually disappears as the bird becomes adult.

The bill in the present species varies much, as will be seen by the following measurements taken from a series of specimens now before us:—

3

No.	Sex.	Locality.	E Mus.	Total length. inches.	Bill. inch.	Wing. inches.	Tail. inches.	Tarsus. inch.
1.		Alps.	S. & D.	6·0	1·0	3·8	2·2	0·95
2.		do.	do.	6·0	0·95	3·9	2·2	0·85
3.		do.	do.	6·0	0·85	3·85	2·35	0·85
4.		Switzerland.	do.	6·2	1·25	3·85	2·25	0·95
5.	♂	Kokand.	do.	6·2	0·9	3·9	2·4	0·9
6.		?	do.	6·0	1·1	3·7	2·1	0·9
7.		?	Howard Saunders.	6·2	1·25	3·95	2·2	0·9
8.		?	Lord Lilford.	6·5	1·2	4·0	2·3	0·9
9.	♂	Nice.	do.	6·0	1·15	3·8	2·35	0·9
10.		Darjeeling.	H. J. Elwes.	6·3	0·9	4·0	2·35	0·95
11.		do.	do.	6·4	0·95	3·9	2·5	0·95
12.	♂	Switzerland.	H. B. Tristram.	6·2	1·0	3·85	2·2	0·9
13.		do.	do.	6·0	1·0	3·7	2·0	0·9
14.		do.	do.	5·9	0·7	3·5	1·9	0·85
15.	♀	Palestine.	do.	6·5	1·1	3·9	2·3	0·9

The following dimensions, from a male specimen killed near Lahore, are given by Dr. Henderson:—Length 6·5 inches, tail from vent 2·0, expanse 11·5; wings when closed reach to within 0·25 of the tail.

This beautiful little bird is found in its favourite haunts from Central and Southern Europe, through Central Asia, to the Himalayas and China. As far as can be ascertained, specimens from all these localities belong to one and the same species. Dresser, on a recent visit to Leyden, examined the large series of specimens in the University Museum, for studying which every facility was afforded by its excellent director, Professor Schlegel, and could perceive no visible difference between Indian specimens and others killed in Europe.

Its most westerly limit would seem to be Spain, where, we are informed by Mr. Howard Saunders, it is "found in Sierra Nevada and probably in some other ranges." Lord Lilford also tells us that it is common among the peaks of the Sierra. Count Salvadori writes:—"Rare in Sardinia; two are in the Museum. It visits the rocks of Cape St. Elias, where Cara has killed several, as also other people." Mr. J. P. Coinde, of Lyons, records one procured at Genas, about twelve miles from Lyons. MM. Jaubert and Barthélemy-Lapommeraye state that it is seen regularly in the South of France in autumn and spring, and a few breed annually in the rocks of the Var mountains and the Basses-Alpes; but they are found more commonly in the Pyrenees and the Swiss Alps. It is a solitary bird, inhabiting the wildest localities, creeping about the fissures and the moss-grown rocks in search of the small insects which form its food. During migration it comes to the villages, and may be seen not uncommonly climbing about the domes of buildings and on old towers. Dr. Giglioli, in his essay on the birds observed at Pisa and the neighbourhood in 1864, writes:—"Once or twice I have had the opportunity of seeing the lovely *Tichodroma muraria* displaying its bright rose-coloured wings on the rocks of the Monte Pisano, near the baths of San Giuliano." Seidensacher remarks, respecting its occurrence in Styria:—"In the winter it occurs on the houses in the town of Cilli, and two or three may always be seen at the old ruined castle. It undoubtedly breeds here; and I have been told where. On the 17th of April, 1864, I saw a male at Pollulle, close to Cilli." Dresser observed it amongst the ruins of

the old castle of Cilli when there in the spring of 1866; and a specimen in the flesh was brought in by a peasant lad when he was there. Krœner states that it "appears occasionally in the rocky parts of the Vosges. It was killed in 1854 in the depths of the Hohwald by M. Marschal, forester of the Strasburg woods, and given to M. Imbach, of Andlau. It was also killed at the Niedech cascade by M. Kneiff, a physician, and presented to the Strasburg Museum."

Our friend Mr. Carl Sachse, of Coblentz, writes us that the Wall-creeper occasionally straggles to the Rhine; and the Central Rhine is probably the northern limit of its range. In February 1860, one was sent to Mr. Sachse from Andernach, and had been observed there for several days previously, frequenting the old Roman wall. It flew into the room of the prison-warder, who caught it. Prince Maximilian of Wied procured a specimen at Windhagen, near Monrepos, about six miles from Neuwied. De Selys-Longchamps says that it is sometimes found in the Ardennes, near Rocroy, on the Belgian frontier. In Loraine and Picardy it is occasional. De la Fontaine records the capture of a specimen at Metz, and of another at Trèves. Borggreve states that it only occasionally occurs in North Germany, as, for instance, twice at Trier (*Schäfer*), once at Neuwied (*Brahts*), several times in the mountains of Silesia (*Gloger*), and found breeding in the high Tatra by Schauer. Dr. Altum also records one, a straggler, killed at Osnabrück. Count Wodzicki writes that it is "found in the Tatra mountains, on the limestone rocks; but I have never seen it on the damp, cold granite. From its mysterious and peaceable mode of life, its silence, and its inaccessible habitation, it is only seen by ornithologists, and no one else would know it as a Polish bird; it climbs about the perpendicular precipices, busy hunting after spiders and insects, moves horizontally, examining each fissure, and in its movements reminds one of a Nuthatch, and is so active that, when one loses sight of it, it is difficult to get a glimpse of it again. It flies noiselessly, like a nocturnal bird, when moving from one place to another, and at times rises into the air, and remains for a second in one place without moving the wings. I found two nests, at about 200 feet height, in cavities not very deep, in one of which there appeared to be young in June, as the parent birds were continually bringing food; in the other the female appeared to be sitting, as the male often came, and the female would then show her head and retire again after obtaining the food. In spite of a large reward I offered, I could find no one who would venture down on a rope to take these nests." Lindermayer did not succeed in seeing it in Greece, but states that it is doubtless found there as a resident, and has been observed breeding on Parnassus and other mountains in Northern Greece. Von der Mühle shot one in the Maina, on Petroboune, and saw several in the castle of Mistra, both at the mouth of the Taygetus. Mr. Robson writes:—"This species is very rare in Asiatic and European Turkey. I have only seen one specimen, taken in the spring migration, on board a ship on the Bosphorus." Turning southward sto Palestine, Canon Tristram mentions that it is found in the wadies near Gennesaret, in the deep Glen of the Litany, and in the dells of Lebanon, and that it is a permanent resident in Palestine; and, according to Rüppell, it is found in Egypt and Abyssinia; but no confirmation of this fact has ever been received since the time of the last-named author. Mr. Keith Abbott obtained the present bird at Trebizond; and Ménétriés says that during his expedition to the Caucacus it was observed on the rocks which border the sea near Bakou, in the month of April: we have likewise seen specimens from Turkestan. Dr. Henderson favours us with the following note on the present bird, as observed by him during the recent expedition to

Yarkand:—"This species was noticed almost daily from the vicinity of Bimbur, right through Cashmere and Ladakh, to beyond Le; but it never occurred after leaving the Pungong Lake. On the return journey the bird had commenced finding its way down to those portions of the plains which lie near the foot of the hills; and on the day of my return I shot a specimen at Lahore. During the cold weather solitary stragglers are occasionally killed, even in the central provinces." Captain Hutton writes, "This beautiful little bird was very common on the rocks near Candahar and in other parts of Afghanistan." Mr. Vigne gives the following note in his 'Travels in Kashmir.' "It is found," he writes, "throughout the Alpine Punjab, displaying the delicate scarlet patch upon its grey wings, as it flits over the perpendicular banks with the movements of a butterfly rather than of a bird." Dr. A. Leith Adams likewise writes:—"Found in the Punjab, frequenting the ravines and broken-up country north of the Jhelum; common in the valley of Cashmere and on the lower Himalayan ranges." Specimens are in the Indian Museum, collected by Strachey in Kumaon. Dr. Jerdon says:—"It is found throughout the Himalayas, descending in winter to the alpine parts of the Punjab. It is also found in Cashmere, in Afghanistan, and the south of Europe. I saw it frequently near Darjeeling, but only in winter, from a level of 2500 to 5000 feet or so. I first saw it in a tea plantation at Kursion, hunting along some small bare ravines that the rains had made in the cleared ground—occasionally on the bank of a road. I also noticed it on rocks on the road-side, and on perpendicular cliffs along some of the rivers. It looks very beautiful when flitting about, the fine red patch on its wings displayed, which it seems fond of doing continually, and, as remarked by Vigne, looking more like a butterfly than a bird." Herr A. von Pelzeln, in his paper on the birds collected by Dr. Stolicza in Thibet and Himalayas, says that it was met with by the latter gentleman at Kotegurh and at Tnantse Sumdo. Mr. Swinhoe states that a specimen of a bird answering to the present species was shot by Mr. Consul Gingell on the mountain-plateau near Foochow during winter. He adds:—"The bird was accurately described to me by that gentleman; but I did not see the specimen. I have never met with the bird myself in China." Pére David has also procured it at Peking.

The Rev. Canon Tristram states, in his 'Ornithology of Palestine:'—"We frequently met with the beautiful Wall-creeper, a permanent inhabitant of the rocky defiles in the northern and central parts. We never saw it in the south, where probably the cliffs are too parched and dry to supply it with its insect food. I know few ornithological sights more interesting than to watch this beautiful little creature as it flits along the face of a long line of cliff, with a crab-like sidling motion, rapidly expanding and closing its wings in a succession of jerks, and showing its brilliant crimson shoulders at each movement. It generally works up the gorge at nearly the same elevation, with its breast towards the face of the rock, and moves close to its surface in a perpendicular position, rapidly darting forth its bill and picking out minute insects as it passes along. In a few minutes it would return down the valley again, quartering the rock in a line parallel to its former course. In the Wady Hamam, near Gennesareth, we twice observed chinks in the precipice where the Wall-creeper was breeding; but they were hopelessly inaccessible."

We translate the following notes from Bailly's 'Ornithologie de la Savoie:'—"It is found with us throughout the year, but always in small numbers. It is generally seen singly, and but rarely in pairs, unless in the breeding-season; the young that have not paired are those that go

about alone. A pair that have been mated and bred do not always part and live in solitude after the season of reproduction, but often continue to live in company during the rest of the year, only parting a for a short time when in search of food, and rejoining each other after the lapse of a few moments, either by the one following the other on some rock or edifice, or by calling to each other in a sharp shrill tone. Their call-note, uttered like that of the Least Spotted Woodpecker, sounds like *pli-pli-pli-pli-pli-pli.* If this pair should in the autumn undertake a partial migration, or wander away for a time, they do so in company; and before the spring, they reappear in their old quarters. One is led to believe that the same couple return to breed when one sees them take possession of places where this species has bred in former years. This bird is most often to be seen in Savoy at the commencement of the winter, when the first frost sets in; it then leaves the mountains, its summer home, and is seen in the towns, villages, or the quarries and rocks adjoining them, and especially on the walls of old solitary chateaux, fortresses, towers, clock-towers, or any elevated buildings. It is continually in motion, climbing by means of successive bounds aided by flaps of the wings, now fluttering like a butterfly from one wall or rock to another, now remaining suspended in mid air before a cleft, moving its wings like a butterfly, searching after food, showing then its red-marked wings and the white and red spots in such a manner that many people who see it thus for the first time take it for a butterfly. It does not climb as elegantly as the Woodpeckers and true Climbers; nor does it, like these, make use of the tail-feathers as a rest, owing to the slightness of the shafts; nor does it move about on trees like them, but frequents the rocks that tower perpendicularly, and walls of edifices and ruins, generally climbing vertically, moving directly towards the summit, and never returning with the head downwards like the true Climbers. When it reaches the top of a wall, it often moves along the plinth from side to side, skipping and balancing itself from right to left in a light easy manner, accompanied with movements of the wings. It does the same on the tops of clock-towers, or the projections of windows, chimneys, or rocks which it meets with when climbing; and I have seen it engaged in the same exercise on the dead branches of old pines and fir trees which crown the summits of the rocks on which it climbs.

"When this bird finds plenty of food on a rock, it will visit it several times consecutively, without making a pause, from the base to the summit. It mounts perpendicularly on a rock that slopes vertically; and when it reaches the top, it drops as if dragged down by its own weight, until it reaches the part where it again commences to climb upwards. . . . . On the 5th of June 1844, near the summit of Hauteran, I observed a pair make eight consecutive ascents and descents of this nature. . . . . .

"The Wall-creeper breeds annually in the vertical rocks of Mount Grenier, Hauteran, Nivolet, La Dent, and the base of the Mont du Chat, of those along the Rhône, especially in the neighbourhood of La Balme, in the gypsum rocks of Villarodin, near Bramans, in some of the rocks of Tarantaise, especially in the district of Creux, near Faucigny, and at the base of Môle. The female deposits her eggs in a crack or fissure, on a few pieces of straw, grass, and moss, mixed with wool and feathers which she and the male collect about the rocks. According to the position they take up in the mountains, they breed late in April, in May, or not before the commencement of June. The pairs that breed earliest often have a second brood early in July. The first sitting consists of four or five eggs; the second, if they have one, only of two or three.

The eggs are oblong, often pyriform like those of Woodpeckers, pure white, with a few scattered spots rose-coloured or pale red in colour and situated on the larger end. In length, when oblong, they measure 18 to 19 millims., and when pyriform 17½ to 18 millims., and in both cases 13 to 14 millims. in diameter.

"The male brings food to the sitting female several times during the day; and when the young are hatched both parents hunt assiduously after food for their progeny. The young birds do not leave the nest until able to fly sufficiently well to accompany their parents on the rocks. They are soon able to creep about with the aid of their feet, which are furnished with curved claws; but their parents will not allow them to venture on the rocks until their wings are strong enough to assist them in their ascents. When, during the first few days after they leave the nest, they are tired of climbing, they rest, holding on at a fissure, and are fed there. When, however, able to fly and feed themselves, their parents leave them; and each young bird then lives a solitary life until the following spring. During this time they are silent; but the old birds, on the contrary, call to each other sometimes, especially when, living in pairs after the breeding-season, they wish to rejoin after a short separation of an hour or so.

"The Wall-creeper is a lively, restless bird, very wild even when frequenting the interior of towns. It is difficult to approach near it; and as it is continually on the move, it is not easy to shoot one. It is occasionally captured by hooks placed along walls or rocks which it visits daily; but they must be baited with some insect that it is fond of, such as a spider or a bunch of spider's eggs, which food it prefers to flies and gnats. It also feeds on larvæ, ant's eggs, and small worms. Its flight, which consists of bounds by means of continual movements of the wings, is generally not elevated, soft, and not long-continued; but as it does not leave the rocks, its wanderings cannot be difficult; nor are its migrations extended far. They retire for the night into holes in the walls or rocks."

Dr. Jerdon says that in India he found that the food of this bird consisted generally of spiders and coleoptera &c.; and Captain Hutton gives the contents of the stomach of those he procured in Afghanistan as "various insects, abundance of ticks, such as infest cattle, &c."

Naumann says that its call-note is like that of the Bullfinch (*Pyrrhula vulgaris*), and it has a Creeper-like song consisting of several short, loud, and melodious strophes, in which the notes *di didi zää* are often repeated with variations, and may in some parts be compared to the song of the Starling. Not only does the male sing, more particularly during the breeding-season, but also the female; and one hears it utter the above strophes in the winter season. When singing, it moves the body about, flutters its wings, and moves its tail, climbing incessantly about the rocks during the time it is singing. Both Dr. Jerdon and Dr. Leith Adams, who have seen the species in India, state that it has no call-note, so far as they had heard.

The subjoined excellent notes on the nesting-habits of this bird are from the pen of Baron Richard von König Warthausen:—"The nidification of this bird puzzled naturalists for a long time. Kramer gives the first information on this head; he states that it nests in inaccessible holes in the rocks and old buildings, as also in hollow trees, and even in *skulls in the dead-houses*. What is partly true and partly fabulous in this account has, for want of better information, been reproduced in most later works. Schinz and Thienemann were the next to give further information. The latter unfortunately only obtained authentic eggs after he had published the account in his

work; and although he now possesses authentic eggs, he then described Wryneck's eggs obtained from Schinz, which, however, he then looked on as doubtful. Of the three nests he there describes, the first appears to be that of a Black Redstart, as it was found in a metal spout, was simply made, flat, composed of hair, feathers, and moss, and contained pure white eggs. The second, obtained by Moquin-Tandon in the Pyrenees, may be genuine, although it contained white eggs, as the spots on some of the eggs are barely visible. The third nest, from the Bündner Alps, is undoubtedly authentic. Naumann describes an oval unspotted white egg 'like that of a Black Redstart,' to which it probably belongs. Baldamus even now appears to think that the Wall-creepers' eggs are Wryneck-like—but latterly gives Abbé Caire's description, which is correct, and refers to Bädeker, who promises a correct figure in his proposed work. With the above before them, regular oologists have sent out Wrynecks' eggs as those of the Wall-creeper; and I have seen several such, in which I could not believe, although they came from 'good sources.' In fact, not so very long ago eggs of *Sylvia cinerea* have figured for those of *Calamoherpe locustella*; but every error, whether wilful or not, will sooner or later be brought to light.

"After considerable trouble I have at last succeeded in obtaining two authentic nests with eggs; and the female belonging to one was shot, and is in my possession, and has a large incubation-spot. Both nests are from St. Gothard:—the one with two eggs taken on the 1st of June 1854, at Mätteli, near Schärenhaus; the other, with three eggs, on the 18th of June, near the Devil's Bridge, in the Schöllern. These nests are composed of similar materials, and are in a manner like large nests of the Common Creeper, as in fact the bird itself, in spite of many differences, is a reproduction of the Common Creeper adapted to the rocky Alps. For the size of the bird the nests are large, and at the first glance look like a heap of vegetable and animal products. The first weighs four loth, is 3″ to 3½″ high, 6″ long, 5″ broad, and 1½″ deep; the irregular wall is 2½″ to 3″ thick. Underneath is a foundation of tender shoots and roots; and on this the true nest is built. It appears as if an old nest, as for instance that of a Redstart, had been used for a foundation. The upper portion consists of fine mosses and white animal hair well worked up together; at the edge the wall of the nest is rounded off, the materials being softest towards the interior; and here and there are a few Ptarmigan's feathers; besides these there are a few tender yellow roots, a few bunches of hair of *Hypudæus terrestris*, Illig., var. *nivalis*, Schinz, and a feather or two out of the breast of the bird itself. The second nest weighs only 1¾ loth, is 2″ high, 5″ long, and 4″ broad, 1½″ deep, and the wall 2½″ to 2¾″ thick. In this the coarse foundation is wanting, except that the materials underneath are coarser and almost entirely of moss. The lining resembles that in the nests of Wagtails, and is not easily detached from the rest; it consists of brown and white hair of animals; and at the bottom of the interior of the nest it is very soft, almost like down, and grey in colour. The edge of this nest is not rounded off like that of the other, but the entire top is even; a few feathers of the bird are here and there amongst the moss and hair, and also some small flocks of wool. The eggs are smaller than average ones of the Wryneck, and larger than those of the Black Redstart; in form they are not round, but oval, pear-shaped (egg-shaped); the shell is slightly polished, and red-spotted on a milk-white ground. The spots are dark reddish brown, very small, dotted sharply, and well defined, being most numerous at the base, and almost wanting at the point. Two of the eggs in

one nest are more marked at the large end; and on these there are some blue-grey spots between. On the other there are so few spots that they can easily be counted. Some dark yellow spots which are rather numerous on them are not real spots, but are caused, I should say, by some parasitical insect. The very fine texture of the shell much resembles that of the eggs of the Common Creeper. Irregular indentations surround numerous deep pores which are visible to the naked eye. In two the small end is especially marked; and in three several fine furrows run along the egg. Three measure 7‴ by 5‴, one 7‴ by $4\frac{5}{6}$‴, the fifth $6\frac{5}{6}$‴ by $4\frac{5}{6}$‴; thus they do not differ greatly. The average weight of the blown egg is $\frac{1}{117}$ loth, whereas the average weight of sixty Wryneck's eggs is $\frac{1}{93}$ loth."

Dr. E. Rey writes to us that the egg of this bird measures 22·75 by 15 millims. In Dresser's collection are two undoubtedly authentic eggs of this bird from St. Gothard, which in shape are, like those described by Baron R. von König Warthausen, oval pear-shaped, and measure $\frac{33}{40}$ by $\frac{23}{40}$, and $\frac{32}{40}$ by $\frac{24}{40}$ inch respectively. In colour they are pure white, slightly spotted, chiefly at the larger end, with dark red.

The figures and descriptions are taken from specimens in our own collection.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, b, c. Alps (*Fairmaire*). *d.* Switzerland (*W. Schlüter*). *e*, ♂. Kokand, October 28th, 1868 (*Dode*).

E Mus. H. J. Elwes.

a, b. Darjeeling, Sikim (*H. J. E.*).

E Mus. Lord Lilford.

a, ♂. Nice, 1858 (*L.*).

E Mus. H. B. Tristram.

a. Chamouni, Switzerland, Angust 1866 (*H. E. Fox*). *b.* Devil's Bridge, Switzerland (*H. B. T.*). *c*, ♂. Geneva, 1845 (*H. B. T.*). *d*, ♀. Gennesaret, March 3rd, 1864 (*H. B. T.*).

Family TROGLODYTIDÆ.

Genus TROGLODYTES.

Motacilla apud Linnæus, Syst. Nat. i. p. 337 (1766).
Sylvia apud Scopoli, Ann. I. Hist. Nat. p. 160 (1769).
Troglodytes, Vieillot, Ois. Am. Sept. ii. p. 52 (1807).
Anorthura apud Rennie, Mont. Orn. Dict. 2nd ed. p. 570 (1831).

The true Wrens inhabit the Palæarctic, Nearctic, Neotropical, and the extreme northern part of the Oriental Region, two species only being met with in the Western Palæarctic Region, where they are residents. They are active, lively little birds, frequenting gardens, groves, hedges, &c., and are often seen on trees as well as on bushes. They feed on insects, seeds, &c., have a loud, mellow, clear song, and sing late in the season and even in the winter. They make a large, strongly constructed, rounded or oblong nest of moss and straws, lined with feathers, and deposit numerous eggs white in colour, more or less dotted or spotted with reddish.

Troglodytes aëdon, an American species, is the type of the genus; but as our European species, *Troglodytes parvulus*, is congeneric, I give its characters, as follows:—Bill moderate in length, slender, acute, slightly arched, compressed towards the tip; nostrils linear-oblong, basal, partly covered by a membrane; wings short, concave, much rounded, first quill short, the second nearly equal to the eighth, the third, fourth, fifth, and sixth nearly equal, the fifth the longest; tail short, slightly rounded; feet and legs moderate in length, strong, tarsus covered in front with four plates and three inferior scutellæ, middle toe united at the base to the outer toe, hind toe rather long, claws strong, curved; plumage long and soft.



COMMON WREN
TROGLODYTES PARVULUS.

NORTHERN WREN
TROGLODYTES BOREALIS

TROGLODYTES PARVULUS.

(COMMON WREN.)

Motacilla troglodytes, Linn. S. N. i. p. 337. no. 46 (1766).
Sylvia troglodytes (Linn.), Scopoli, An. I. Hist.-nat. p. 160. no. 239 (1769).
Sylvia troglodytes (Linn)., Latham, Ind. Ornith. ii. p. 547. no. 148 (1790).
Sylvia troglodytes (Linn.), Meyer, Taschenb. deutsch. Vögelk. i. p. 215 A (1809).
Troglodytes parvulus, Koch, Baier. Zool. i. p. 161. no. 84 (1816).
Troglodytes europæus, Leach, Syst. Cat. Brit. Mus. p. 25 (1816).
Troglodites (*Motacilla troglodytes*, Linn.), Cuvier, Règne An. i. p. 370 (1817).
Troglodytes europea, Vieillot, Nouv. Dict. d'Hist. Nat. 34. p. 511 (1819).
Troglodytes regulus, Meyer, Zusätze & Berichtigungen, Meyer's Taschenb. deutsch. Vögelk. p. 96 (1822).
Troglodytes punctatus, Koch, F. Boie, Isis, 1822, p. 551.
Troglodytes punctatus, C. L. Brehm, Naturgesch. europ. Vögel, i. p. 318 (1823).
Troglodytes vulgaris, Fleming, Brit. Anim. p. 73 (1828).
Troglodytes (*Motacilla troglodytes*, Linn.), Cuvier, Règne An. 2nd ed. p. 390 (1829).
Anorthura communis, Rennie, Montagu, Ornith. Dict. 2nd ed. p. 570 (1831).
Troglodytes domesticus, C. L. Brehm, Isis, 1828, p. 1284; Vög. Deutschlands, p. 454 (1831).
Troglodytes sylvestris, C. L. Brehm, loc. cit. (1828); op. cit. pp. 454, 1030, pl. xxiii. fig. 6 (1831).
Troglodytes communis, Cuvier, Gould, P. Z. S. 1834, p. 51. no. 16, "Trebizond."
Troglodytes vulgaris, Temm. (*mot. propr.*) Man. d'Orn. iii. p. 160 (1835).
Troglodytes parvulus, Koch, Küster, Isis, 1835, p. 225, "Sardinia."
Anorthura troglodytes (Linn.), Macgillivray, Hist. Brit. Birds, iii. p. 15. fig. 188 (1840).
Sylvia troglodytes (Linn.), Wagner, Reisen in Algeria, iii. p. 81 (1841).
Troglodytes troglodytes (Linn.), Schlegel, Rev. Crit. Ois. d'Europe, p. xliv (1844).
Troglodytes europæus, Cuvier, Bp. Consp. i. p. 221 (1850).
Troglodytes tenuirostris, C. L. Brehm, Vogelfang, p. 238, "Germany" (1855).
Troglodytes naumanni, C. L. Brehm, op. cit. p. 238, "south of France and Bohemia" (1855).

(The above by Lord Walden.)

Wren, *Jenny Wren*, *Kitty Wren*, English; *Dreatham*, *Dreollan*, *Dreadham-Donn*, Gaelic; *Roitelet*, *Troglodyte mignon*, French; *Zaunkönig*, *Zaunschlüpfer*, *Winterkönig*, *Schneekönig*, German; *Troglodita*, *Cucito*, Spanish; *Carricinha das moitas*, Portuguese; *Puyone de veranu*, *Re degli uccelli*, Italian; *Winterkoning*, Dutch; *Gjerdevippe*, *Gjerdekonge*, *Gjerdesmutte*, *Tommeliden*, Danish; *Gjerdevippe*, Norwegian; *Gärdsmyg*, *Tummeliten*, Swedish; *Peukaloinen*, Finnish; *Corolek*, Russian; *Strzyzyk wolowe oczko*, Polish.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 651. fig. 2; Frisch, Vög. Deutschl. pl. 24. fig. 3; Werner, Atlas,

Insectivores, pl. 62; Kjærb. Orn. Dan. taf. xxiv.; Fritsch, Vög. Eur. pl. 22. figs. 17, 18; Sundevall, Sv. Fogl. pl. xv. fig. 3; Gould, B. of Eur. pl. 130; id. B. of G. B. vol. ii. pl. lxiii.; Naumann, Vög. Deutschl. taf. 83. fig. 4; Schlegel, Vög. Nederl. pl. 65.

♂ *ad.* suprà rufescenti-fuscus, capite unicolori, saturatiore: dorso et uropygio nigro-fusco transversim fasciatis: remigibus fuscis, primariis sex externis in pogonio externo fusco albidoque tessellatis, cæteris et secundariis dorso concoloribus et eodem modo fasciatis: rectricibus rufescenti-fuscis nigro-fusco fasciatis: subtùs brunnescenti-albidus, abdomine crissoque nigro-fusco fasciatis et rufescente fulvido adumbratis: supra oculos lineâ albidâ.

Adult Male (Norwood, 26th December). Upper parts rufous-brown, darker on the head and nape, and more rufous on the tail and wings; back, rump, tail, inner primaries, secondaries, and wing-coverts banded with narrow blackish brown bars; the outermost primaries marked on the outer web with blackish brown and dull brownish white; over the eye a dull whitish stripe; underparts dull whitish, slightly washed with rufous on the breast; abdomen, crissum, and under tail-coverts washed with rufous brown, and barred with blackish brown; bill horn-brown, lighter at the base of the lower mandible; legs light brown; iris brown. Total length 3½ inches, culmen 0·58, wing 1·95, tail 1·35, tarsus 0·75.

Obs. After having compared the various specimens in the series now before me, I fail to detect any specific distinction between examples from Central Asia, Asia Minor, Algeria, Northern and Southern Europe, and Great Britain, and but very little individual variation. Specimens from Italy and Spain are a trifle clearer-coloured, some being more, others less barred on the upper parts; one specimen from Greece has the back but comparatively little barred, though not less so than another from Durham. Specimens from Palestine, Asia Minor, and Chemkend in Central Asia do not differ *inter se*, except that the last (which is labelled *T. fumigatus*) is a trifle paler than the other two; they all have the back clearly barred, but the bars are not so clear or numerous as in a specimen from Denmark. One specimen from Algeria agrees precisely with others from Great Britain, which have the bars on the upper parts less clearly defined. I have just received a couple of specimens from Persia, both of which agree closely with British examples. The relative measurements of the various specimens are as follows:—

	Culmen. inch.	Wing. inch.	Tail. inch.	Tarsus. inch.
England, ♂ (average size)	0·6	1·90	1·4	0·74
Alhambra, Spain, ♂	0·6	1·9	1·48	0·67
Denmark	0·55	1·85	1·4	0·65
Macedonia, ♂	0·52	1·9	1·4	0·7
Algeria	0·6	1·9	1·5	0·7
Asia Minor, ♂	0·6	1·9	1·4	0·72
Palestine	0·65	1·95	1·45	0·75
Central Asia	0·55	2·0	1·4	0·75
Shores of the Caspian	0·55	1·8	1·35	0·75
Shiraz, ♀	0·6	1·8	1·25	0·75

This bird, common and well known in almost every part of Great Britain, is found throughout Europe from the north of Scandinavia down to Algeria, extending eastward into Central Asia; and should the Japanese bird prove, as I surmise, to be the same as the European species, it also occurs in that country and China. In Great Britain it occurs generally throughout the

three kingdoms, being everywhere common from the Outer Hebrides and Orkney to the extreme south of England, as also in every part of Ireland. Mr. R. Gray (B. of W. of Scotl. p. 194) writes that "in Scotland it is found inhabiting the most densely wooded glens of the mainland and the barest rocks of the distant islands, alike at home in both haunts, and flitting about with amusing briskness, even in the severest weather. I have heard it singing in places where there were but few elements to attract birds of its size, and none certainly to provoke their musical powers. It is common on Ailsa Craig, breeding near the base of the rock among the tufts of coarse vegetation growing near the edge of the rude pathway for some distance round the island. On all the Outer Hebrides it is likewise at home, frequenting heath-clad rocks and the rugged banks of lakes, which it enlivens by its merry movements and clear trilling notes. The nest in such localities is found in the abrupt face of a broken bank, or on the naked edge of some deep pool, where it is seldom distinguished for neatness, harmonizing as it does with the dark-coloured heath or peat moss. Frequently, too, it makes choice of a turf dyke, living in the society of chattering Starlings, which are very abundant, and by no means amiable neighbours."

In the Færoes and Iceland the present species is replaced by its close ally, *Troglodytes borealis*; but in Scandinavia the Common Wren is the only species found, and is tolerably numerous from the southern portions of the country up to about 64° or 65° N. lat. in Norway—and in Sweden, according to Nilsson, up into Swedish Lapland. Speaking of its range in Norway, Mr. Collett writes (Orn. of N. Norway, p. 12) that he "met with it in July 1871 at Bindalen, in the south of Helgeland, which appears to be the usual northern limit of its distribution. An individual was taken at Alstahoug (66° N. lat). in November 1842."

In Finland I have met with it commonly in various parts of the country; and it is said to remain there until quite late in the season. Mr. von Nordmann (J. f. O. 1864, p. 365) writes that he has known it to remain near Helsingfors until December, when the ground was covered with deep snow; and he thinks it possible that some individuals may remain over the winter, even in that cold country. In Northern Russia it is said by my collector there to occur near Archangel during the summer; and Mr. Meves met with it in the large woods near Ladeinopole and other places. Mr. Sabanäeff informs me that it is "common enough in the Jaroslaf and Moscow Governments, where it occasionally winters; it occurs, though rarely, in the Kaslinsky Ural, but becomes commoner on the western slope." Mr. V. Jacovleff (Bull. Soc. Imp. Mosc. 1872, p. 338) writes that it is a resident at Astrachan, but seldom breeds there, its nest having been found only on the Zajashiem Island. It is more numerous in the autumn and winter than the summer season. It has only once been met with (in March) near Sarepta; and neither Eversmann nor Bogdanoff observed it on the Volga."

Throughout the Baltic provinces, North Germany, Denmark, Holland, Belgium, France, and, indeed, Europe generally, it is recorded as common.

Count Casimir Wodzicki found it in the Carpathians at an altitude of 3000 feet above the sea-level, and states (J. f. O. 1853, p. 437) that it seldom, even during severe winters, descends to the plains. On the island of Borkum, curiously enough, it is said by Baron von Droste Hülshoff (Vög. Bork. p. 91) to be common during the winter, arriving in October, and on the other hand, but very rarely seen during the summer. The same is stated by Mr. H. Schilling (J. f. O. 1853, p. 372) to be the case on Rügen; and it would therefore appear that, in some

parts of Europe at least, this little bird is a partial migrant. In Portugal it is, according to Professor Barboza du Bocage, common; and Mr. Howard Saunders, who has lent me Spanish specimens for examination, writes (Ibis, 1871, p. 209) that it is in Southern Spain "not uncommon on the wooded hills," but he never succeeded in finding its nest. Major Irby writes that "the Wren is resident in Andalucia, but much more common during the winter months. They nest very early, as I have seen the young able to fly by the 26th of April. A pair in 1872 frequented the Alameda at Gibraltar to the end of May, and doubtless nested there." It is likewise found generally throughout Southern Europe. Bailly records it as common and resident in Switzerland and Savoy. Salvadori (J. f. O. 1865, p. 133) speaks of it as found in Italy, in the summer season in the mountains, and on the plains in the winter; and Doderlein says the same as regards Sicily. Lord Lilford, who records it (Ibis, 1860, p. 232) as common and resident in Epirus, did not observe it in the island of Corfu, except during the winter. Lindermayer (Vög. Griechenl. p. 56) likewise states that it is common in Greece at all seasons, and breeds in the woods of Rumelia. In South-eastern Europe, Southern Russia, and on the shores of the Black Sea and Caspian it appears also to be common. Von Nordmann records it as appearing in Odessa in September, and passing the winter there, it being generally distributed in small numbers throughout Southern Russia; and Ménétries met with it numerously at Leukoran. Lord Walden has lent me a specimen from Asia Minor, which does not differ from our bird, nor does the one collected by Canon Tristram in Palestine, in which country, he writes, (Ibis, 1866, p. 284) he met with it "only in the north, where it seemed very scarce." It does not, so far as I can ascertain, occur in North-eastern Africa, but is certainly found in Algeria and Morocco. Wagner, Canon Tristram, Major Loche, and Mr. J. H. Gurney, jun., all met with it in Algeria, where it would appear to be a resident; and Mr. C. F. Tyrwhitt Drake records it from Eastern Morocco, and writes (Ibis, 1867, p. 427) that he saw a second species in that country, but he has not yet been able to procure specimens. It has been recorded by Mr. Vernon Harcourt (P. Z. S. 1851, p. 145) as a straggler to Madeira; and Dr. Carl Bolle states that it has been met with in the Canaries; but Mr. F. DuCane Godman never saw it on those islands, and Webb and Berthelot state (Orn. Canar. p. 16) that they never observed it there.

To the eastward the Wren occurs in Persia, whence Mr. Blanford brought home a couple of specimens, which I have had for examination, and which do not differ from our European bird. Dr. Filippi likewise observed it in Persia; and the Russian collectors have obtained it in Central Asia.

I have been unable to examine a specimen from Japan, where the Wren has been described as a distinct species, under the name of *Troglodytes fumigatus*, Temm. (Man. d'Orn. iii. p. 161, 1835); but judging from Professor Schlegel's notes in the 'Fauna Japonica,' p. 69, it can scarcely be distinct. He writes that it is merely a trifle darker in colour, and that he could not separate it from our European species; but not having been able to examine a specimen, I have deemed it best not to include *T. fumigatus* in the list of synonyms of the present species. The bird referred to in Mr. G. R. Gray's 'Hand-list' as *T. fumigatus*, which is in the British Museum, proved on examination to have come from Alaska, and is referable to *T. alascensis*, Baird. In the Himalayas there is another species (*T. nipalensis*, Hodgs.) which differs from our bird in being darker, and having the back more barred, and the underparts throughout

distinctly barred. I have examined two specimens of this bird in the British Museum, which measure—culmen 0·5 inch, wing 1·7, tail 1·2, tarsus 0·6. Lord Walden informs me that "Cashmere examples appear to differ from Darjeeling birds. *T. formosus*, Walden (*T. punctatus*, Blyth, nec Brehm), ex Darjeeling, is also totally distinct." In America the present species is replaced by an allied species which differs chiefly in having the bill stouter and straighter. This species, which by some naturalists has been considered identical with our European bird, was described under the name of *Troglodytes hyemalis*, Vieill. (Nouv. Dict. xxxiv. p. 514, 1819). Professor F. Baird, in his recent work on North-American birds (p. 155), writes as follows:—"The Winter Wren is very closely related to the common Wren (*T. parvulus*, Koch) of Europe, so much so, in fact, that the two almost seem to be varieties of one species. The differences, as shown in a large series from both continents, are the following:—In *T. parvulus* there is a tendency to more uniform shades; and the prevailing tint anteriorly, beneath, is a pale yellowish ash, almost immaculate, instead of brownish ochraceous, showing minute specks and darker edges to the feathers. In extreme specimens of *T. parvulus* the bars even on the tail and wings (except the primaries, where they are always distinct) are very obsolete, while on the lower parts they are confined to the flanks and crissum. Sometimes, however, specimens of the two are found which are almost undistinguishable from each other. In fact, it is only by taking the plainer European birds and comparing them with the darker American examples from the north-west coast, that the difference between *T. parvulus* and *T. hyemalis* is readily appreciable."

These statements I can generally confirm, except that, in the specimens of *T. parvulus* I have examined, the bars are by no means obsolete on the tail, but in almost all very clearly defined, unless Professor Baird refers to the light bars and not the dark ones. Moreover, as before stated, the American species has a stouter and straighter bill.

In my collection I have a specimen of *T. hyemalis* from Vancouver's Island, collected at Fort Rupert by Mr. P. N. Compton, which in size is larger than our European species, measuring—culmen 0·6, wing 1·75, tail 1·35, tarsus 0·75,—and is much darker red, the underparts being dull rusty brown, instead of dirty brownish white as in our bird.

In Alaska there is another species (*Troglodytes alascensis*, Baird, Trans. Chicago Acad. Sci. 1, ii. p. 15, pl. xxx. fig. 3, 1869) differing in having a longer wing and bill and being generally larger than *T. hyemalis*. Professor Baird gives the habitat of this species as the "Aleutian and Pribylow islands, Alaska," and the measurements as—culmen 0·65, wing 2·20, tail 1·60, tarsus 0·75.

Like the Robin the Wren is one of the most familiar and best known of our birds; for it generally affects the immediate neighbourhood of inhabited places, and is usually to be seen in gardens, hedgerows, or faggot-stacks, often building in outhouses or in the woodbine-covered porches so often seen at cottages in the south of England. As pert and almost as bold as the Robin, its name is often coupled with that of this species; and I well recollect an early lesson taught to me by my nurse, when even in my tender years I showed my ornithological proclivities by robbing a Wren's nest, that "Little Cock Robin and Little Jenny Wren are God Almighty's cock and hen," and that therefore they should not be molested. I have since found that amongst the peasantry in the north of England not a few believe in the relationship between these two species as above referred to. Like the Robin the Wren is a bird that is but seldom molested,

and enjoys, even amongst boys, a sort of protection, its nest being comparatively seldom robbed if other nests are to be had. It is rather an early breeder, and constructs a most elaborately built nest, which is placed in a bush or hedge, or in a creeper or convenient place at the side of a tree, or else in some outbuilding, or (where I have often found nests) in an old faggot-stack. Macgillivray, writing on the nidification of this species, says that it "pairs about the middle of spring, and begins early in April to construct its nest, which varies much in form and composition, according to the locality. One brought me by my son, and which he found while gathering plants in a wood near Melville Castle, is of astonishing size compared with that of its architect, its greatest diameter being seven inches, and its height five. It presents the appearance of a rude mass of decayed vegetables, of an irregularly rounded form. Having been placed on a flat surface under a bank, its base is of a corresponding form, and is composed of layers of decayed ferns and other plants, mixed with twigs of herbaceous and woody vegetables. Similar materials have been employed in raising the outer wall of the nest itself, of which the interior is spherical, and three inches in diameter. The wall is composed of mosses of several species, quite fresh and green; and it is arched over with fern leaves and straws. The mosses are curiously interwoven with fibrous roots and hair of various animals; and the inner surface is even and compact, like coarse felt. To the height of two inches there is a copious lining of large and soft feathers, chiefly of the Wood-Pigeon, but also of the Pheasant and Domestic Duck, with a few of the Blackbird. The aperture, which is in front, and in the form of a low arch, two inches in breadth at the base, and an inch and a half in height, has its lower edge formed of slender twigs, strong herbaceous stalks, and stems of grasses, the rest being felted in the usual manner. This nest is a magazine of botany, there entering into its composition leaves of *Fagus sylvatica*, fronds of *Aspidium dilatatum* and *A. filix-mas*, blades of *Phalaris arundinacea*, stems of several grasses and other herbaceous plants, some twigs of the larch and other trees, and four or five species of *Hypnum*. It contained five eggs, of an elongated oval form, averaging eight lines in length, and six lines in breadth, pure white, with some scattered dots of light red at the larger end, one of them with scarcely any, and another with a great number. Of three nests presented to me by Mr. Weir, one is extremely beautiful, being composed entirely of fresh green *Hypna*, without any internal layer, although, no eggs having been found it, it possibly had not been completed. It is of an oblong form, seven inches in length, and four in its transverse diameter. The mouth measures an inch and eight twelfths across, one inch and a twelfth in height. Its lower part is composed of small twigs of larch laid across and interwoven, so as to present a firm pediment. The longitudinal diameter of the interior is three inches and a half. Another, formed on a decayed tuft of *Aira cæspitosa*, is globular, six inches in diameter, and composed of moss, with a lining of hair and feathers, chiefly of the domestic fowl. The third is globular, and externally formed almost entirely of ferns, like that described above. In all the nests of this species which I have seen, the lower part of the mouth was composed of twigs of trees, or stems of herbaceous plants, laid across, and kept together with moss and hair." Professor Newton (Brit. Birds, p. 462) remarks that this species adapts its nest to the place where it is built; thus, "if built against a hayrick the exterior of the nest is composed of hay, i against a tree covered with white lichen, it is studded with that material, and formed of green moss if against a tree overgrown with the same." He further remarks that this precaution is not always used by the bird, in

which I quite agree with him, as I have, on several occasions, found nests contrasting visibly with the place where they were built. Mr. Harting (Birds of Middlesex, p. 114) records a peculiar nest of this species found by him, and writes as follows:—"A pair of Wrens built their nest on an old stump, and hatched their young. Finding themselves undisturbed, they resorted to the same place the following year, where they found their old nest. Instead of repairing it, however, and using it again, they built another on the top of it, and had thus a 'storied' house. The 'ground-floor,' however, was only visited occasionally; for the little family was brought up in the 'first-floor' room." As I mentioned above, the Wren appears often to build by preference in the neighbourhood of human habitations; and an interesting instance of this is recorded by Mr. W. H. Trinthammer, who states (J. f. O. 1862, p. 223) that some pitch-burners near Hanau had a small hut, which was frequently removed, as they changed their locality for the purpose of work. Seeing a Wren slip into a hole in the roof, when once on a visit to the workmen's hut, he made inquiries and ascertained that a pair of Wrens had for years built in the roof of the hut, following it whenever it was removed.

It is well known that the Wren has a peculiar habit of building nests which are not used for the purposes of incubation. These nests, being by the country-folks supposed to serve the male bird as a sleeping apartment, are commonly called "cocks' nests;" but it does not appear that any one has been able satisfactorily to show for what purpose they are constructed. My own opinion certainly is that they are intended as houses of refuge during cold or inclement weather; and this opinion is shared by many other naturalists. The Wren appears to be susceptible of cold; and during the winter-season, when the nights are very raw, an entire family will creep into a convenient hole, and by huddling close together retain as much heat as possible. As a boy I often watched them enter a hole in the thatch of an old barn near our house, and have frequently caught them there after dark; but in spite of being disturbed they never forsook their favourite hole.

The song of the male Wren is clear and sweet, and remarkably loud for so small a bird. It is uttered both when the bird is sitting and when taking a short flight. Its call-note is a peculiar *churring* sound. It sings not only during the summer, but at almost every season of the year.

It feeds on small insects of various sorts, larvæ, and pupæ. Macgillivray, on the authority of Mr. Neville Wood, says that its stomach has been found to contain hard seeds, and that it sometimes eats red currants.

A most peculiar custom exists in Ireland, and not only there but, according to Sonnini, also in Southern France, of hunting the Wren on a particular day (in Ireland on Christmas day), and afterwards carrying the defunct bird about in procession. Thompson (B. of Ireland, i. p. 346) writes as follows respecting this custom:—"To hunt the Wren is a favourite pastime of the peasantry of Kerry on Christmas day. This they do, each using two sticks, one to beat the bushes, the other to fling at the bird. It was the boast of an old man who lately died at the age of 100, that he had hunted the Wren for the last eighty years on Christmas day. On St. Stephen's day the children exhibit the slaughtered birds on an ivy bush decked with ribbons of various colours, and carry them about, singing the well-known song commencing 'The Wren, the Wren, the king of all birds,' &c., and thus collect money." In a footnote he further writes

that "as to the origin of the whimsical but absurd and cruel custom [of hunting the Wren] we have no data. A legend, however, is still current among the peasantry which may serve in some degree to elucidate it. 'In a grand assembly of all the birds of the air, it was determined that the sovereignty of the feathered tribe should be conferred upon the one who would fly highest. The favourite in the betting-book was of course the Eagle, who at once, and in full confidence of victory, commenced his flight towards the sun; when he had vastly distanced all competitors, he proclaimed with a mighty voice his monarchy over all things that had wings. Suddenly, however, the Wren, who had secreted himself under the feathers of the Eagle's crest, popped from his hiding-place, flew a few inches upwards, and chirped out as loudly as he could, 'Birds, look up and behold your king!' There is also a tradition that in 'ould ancient times,' when the native Irish were about to catch their Danish enemies asleep, a Wren perched upon the drum and woke the slumbering sentinels just in time to save the whole army; in consequence of which, the little bird was proclaimed a traitor, outlawed, and his life declared forfeit whenever he was henceforward encountered.'—*Mr. and Mrs. S. C. Hall's Ireland*, vol. i. p. 25. The lines, according to the same work, are:—

> "'The Wran, the Wran, the King of all birds,
> St. Stephen's day was cot in the furze;
> Although he is little, his family 's grate,
> Put your hand in your pocket, and give us a trate.
> Sing holly, sing ivy,—sing ivy, sing holly,
> A drop just to drink, it would drown melancholy.
> And if ye dhraw it ov the best,
> I hope in heaven yer soul will rest,
> But if you dhraw it ov the small,
> It wont agree wid de Wran boys at all.'"

The fable respecting the Eagle and the Wren is known in most parts of Europe, but is almost as often applied to the Golden-crested Wren as to the present species. I do not, however, find the custom of hunting the Wren recorded from any other part of the continent excepting in Southern France. Professor Newton, in the edition of Yarrell now being published, gives the following particulars, which I cannot do better than transcribe, as they combine all the available information on the subject:—"It seems to have been first noticed by Charles Smith, in his 'State of the County of Cork' (ii. p. 334, note), published in 1750, as followed in the south of Ireland, and subsequently by Vallanay (Collectanea de Rebus Hibernicis, iv. no. 13, p. 97). On Christmas day boys and men, each using two sticks, one to beat the bushes, the other to fling at the bird, went out in a body to hunt and kill the Wren, which from its habit of making but short flights, was no doubt soon done to death. On the following day, the feast of St. Stephen, the dead bird, hung by the leg between two hoops, crossed at right angles and decked with ribbons, was carried about by the 'Wren boys,' who sang a song beginning 'Droeilin Droeilin, ri an t-eum' (that is, 'Wren, Wren, king of birds'), and begged money 'to bury the wren.' This ceremony, which, however it may have arisen, had become quite senseless, was, when Thompson wrote, falling into disuse; and in 1845 the then Mayor of Cork by proclamation forbade its continuance.

"Mr. Halliwell (Nursery Rhymes, ed. 2, p. 248) notices the same practice in the Isle of Man, and gives the words there sung; while on February 4th, 1846 (as appears by the 'Literary Gazette,' p. 131, of the 7th of that month), Mr. Crofton Croker drew attention to the subject at a meeting of the British Archæological Association, and it was stated that a similar custom existed in Pembrokeshire, where on Twelfth day a Wren was carried from house to house in a box with glass windows, surmounted by a wheel, to which ribbons were hung. Sonnini (Voyage dans la Haute et la Basse Egypte, i. p. 18) mentions a like ceremony practised a century ago, towards the end of December, at La Ciotat, near Marseilles; but there the Wren's murderers were armed with swords and pistols, and their victim was slung to a pole, borne, as if it were a heavy load, on the shoulders of two men, who paraded the village; and then, after gravely weighing it in a great pair of scales, all gave themselves up to festivity."

The eggs of this species are pure white, with a faint pinkish tinge when fresh, and are sparingly spotted, chiefly at the larger end, with small red spots. In size, specimens in my collection from England and Greece measure from $\frac{25}{40}$ by $\frac{19}{40}$ inch to $\frac{27}{40}$ by $\frac{20}{40}$, those from Greece being the smallest. The number ef eggs deposited is from seven to eight, but sometimes more; according to Professor Newton as many as twenty have been taken out of one nest.

The specimen figured, on the upper portion of the Plate, with *T. borealis*, was obtained by myself in Surrey, this being also the specimen described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. South Norwood, Surrey, December 26th, 1871 (*H. E. D.*). *b*. Hampstead, May 6th, 1870 (*R. B. Sharpe*). *c*. Margaard, Denmark, November 26th, 1870 (*A. Benzon*). *d*, ♂. Piedmont, April 8th, 1870 (*Count Salvadori*). *e*, ♂. Macedonia, October 28th, 1869 (*Dr. Krüper*).

E Mus. Lord Walden.

a, ♂. Asia Minor (*Robson*). *b*, ♂. Chemkend, Central Asia (*Dode*).

E Mus. H. B. Tristram.

a, ♂, *b*, ♀. Greatham, Durham, March 23rd, 1866 (*J. H. Gurney, junr.*). *c*. Castle Eden, Durham (*H. B. T.*). *d*, ♂. Mahr el Kelb, Palestine, November 24th, 1863 (*H. B. T.*). *e*. Algiers, May 6th, 1856 (*H. B. T.*).

E Mus. Howard Saunders.

a, ♂. Baños de Alhama, Spain, December 1870 (*H. S.*). *b*, ♂. Alhambra, Spain, May 1873.

E Mus. Brit. Reg.

a. Belgium.

E Mus. Ind. Calc.

a, ♂. Shores of Caspian, November 1869 (*Major St. John*). *b*, ♀. Shiraz, Persia, August 1870 (*Major St. John*).

TROGLODYTES BOREALIS.

(NORTHERN WREN.)

"*Sylvia troglodytes*, Lath.," Faber, Leben d. hochn. Vögel, p. 321 *b* (1826, nec Lath.).
"*Troglodytes europæus*, Leach," P. A. Holm, Nat. Tids. 1847, p. 482 (nec Leach).
Troglodytes punctatus auct., P. A. Holm, tom. cit. p. 523.
Troglodytes borealis, J. C. H. Fischer, J. f. Orn. 1861, p. 14.
"*Troglodytes parvulus*, Koch," Preyer, Reise n. Island, p. 393 (1862, nec Koch).
Troglodytes borealis, Fischer, Newton in Baring-Gould's Iceland, App. A, p. 408 (1863).

Gjerdesmutte, Danish; *Mousabrouir*, Færoese; *Musarbrodir*, *Musarrindill*, Icelandic.

Figura unica.

J. C. H. Fischer, J. f. Orn. 1861, pl. i.

Ad. Troglodytæ parvulo persimilis, sed major et saturatior, corpore subtùs usque ad pectus conspicuè fasciato, rostro majore et robustiore, pedibus robustioribus.

Adult Male (Færoes). Resembles *Troglodytes parvulus* in general colour and markings, but is darker and has the underparts more strongly barred; beak rather longer than in *T. parvulus* and much stouter, measuring in width at the base of the lower mandible 0·3 against 0·15 in *T. parvulus*; legs and feet much stouter than in that species, measuring—tarsus 0·88, hind toe with claw 0·68, against tarsus 0·6, and hind toe with claw 0·55; soft parts as in the common Wren. Total length about 4 inches, culmen 0·65, wing 2·1, tail 1·5, tarsus 0·88.

This northern representative of our common Wren, differing chiefly in being much larger and stouter-built than *Troglodytes parvulus*, is found only in Iceland and the Færoe Islands, from which latter locality it was first described by Mr. J. C. H. Fischer in 1861. In Iceland it is said by Preyer (*l. c.*) to be rather rare, and he only met with it in the thickets of the Finjoska-dalur. Professor Newton, speaking of this Icelandic Wren, says that he considers it to be midway between our bird and *Troglodytes aëdon* of North America.

In the Færoes this species appears to be tolerably common, especially where neither cats nor rats are found. Mr. Fischer states that it frequents the neighbourhood of habitations, and is protected by the inhabitants, who do not like to see it molested, and hence he had at first some difficulty in procuring skins and eggs. Captain Feilden, who visited the Færoes this last spring, brought back nest, eggs, and skins of the Northern Wren, which he has kindly lent to me for examination. Writing in the 'Zoologist,' this gentleman states that "this species of Wren is spread throughout the Færoe Islands, abundant in those parts where there are no rats or mice, and consequently where cats are not encouraged; but where the cat is numerous you may look in vain for this sweet songster. I made my first acquaintance with it on the Island of Skuæ on

the 23rd of May; there they are to be seen about the village in considerable numbers, running in and out of the chinks between the stone-built cottages like mice, then alighting on the grass roofs and, with outspread wings and swelled throat, pouring forth a stream of melody far exceeding that of *T. parvulus*. As soon as it was known that I wanted 'Mousabrouir' nests and eggs, a brisk search commenced, boys, girls, and women aiding in it. I was taken from outhouse to outhouse to look at nests: all were exactly alike—outwardly a firm structure of hay, next a lining of moss, then a snug bed of down and sea-fowl feathers. All the nests I saw were placed in the same position—namely, between the blocks of stone of which the outhouses are built, the entrance to the nest invariably facing inwards. I examined seven or eight nests in this village: one only had eggs; the rest had young two or three days old. On the Island of Great Dimon I found the Wren numerous, and discovered its nest in a cave close to the landing-place, far away from the habitations of men. At Porkerri, on the 30th of May, 1872, I noticed a brood of five following their parents in and out of the boat-houses. In the northern islands it is abundant; in Swinoe, on the 7th of June, I saw a brood following their parents, who collected them together with a chirp, and then fed them with insects that they had picked out of the gutter. The same day I put my hand into a nest and drew an old one out of it; it flew a few feet from me, perched on the gunwale of a boat, and broke out into a merry song. Before I left the boat-house the Wren returned to its nest. When I staid in the pastor's house at Videroe I was awakened in the morning by the song of this bird close to the open window, so loud and so melodious that no one could help noticing the difference between its note and the more feeble efforts of our common Wren." Captain Feilden kindly sent me one of the nests he obtained in the Færoes for examination; and on comparing it with one of *T. parvulus* it is noticeable by being much stronger and more solidly constructed, besides having the entire outer shell of coarse hay. Five eggs of this Wren which I have in my possession, and which were collected on the Færoes by Mr. H. C. Müller, differ from those of *T. parvulus* in being considerably larger, measuring from $\frac{28}{40}$ by $\frac{20}{40}$ to $\frac{29}{40}$ by $\frac{22}{40}$ inch, but do not differ in colour or markings.

The specimen figured is one in my collection obtained on the Færoes.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*. Færoes (*H. C. Müller*).

E Mus. Howard Saunders.

a, *juv.* Suderoe, Færoes, 31st May 1872 (*H. W. Feilden*).

Family MOTACILLIDÆ.

Genus MOTACILLA.

Ficedula apud Brisson, Orn. iii. p. 461 (1760).
Motacilla, Linnæus, Syst. Nat. i. p. 328 (1766).
Parus apud S. G. Gmelin, Reise, iii. p. 101 (1774).
Pallenura apud Pallas, Zoogr. Rosso-As. i. p. 500 (1811).
Budytes apud Cuvier, Règne Animal, p. 371 (1817).
Calobates apud Kaup, Natürl. Syst. p. 33 (1829).

The Wagtails and Pipits have by many authors been placed near the Larks; but they certainly assimilate much more closely with the Thrushes and Warblers, though differing from these in having nine primaries.

This genus ranges throughout the Palæarctic, Ethiopian, and Oriental Regions; and one species (*Motacilla flava*) is found in the north-western portion of the Nearctic Region. Eight species inhabit the Western Palæarctic Region, all of which are constant residents and breed within its limits. The Wagtails frequent pasture and grassy open country where there is plenty of water, and are usually seen on the borders of streams and lakes. One species (*Motacilla melanope*) evinces a partiality for mountain-streams, and is not unfrequently met with in rocky and even in almost sterile places. These birds feed on insects of various kinds, small Crustacea and Mollusca, usually searching for their food near water. They run with great ease, and almost always vibrate their body like some of the small Waders; they fly with tolerable rapidity and ease, their flight being undulating. They build an open cup-shaped nest of dry grass, moss, &c., lined with wool, hair, or feathers, and deposit five or six greyish-white, buffy-white, or pale brownish eggs, marked or spotted with grey or brown. The genus *Motacilla* has by many authors been subdivided into *Motacilla*, *Budytes*, and *Calobates*, the first containing all the black-and-white species, the second *Motacilla flava* and its allies, which have a long hind claw, and the third *Motacilla melanope* only; but it appears to me unnecessary to do this, and I have preferred to retain all under the present genus.

Motacilla alba, the type of the genus, has the bill moderately long, straight, slender, rather broader than high at the base, the notch obsolete, nostrils small, elliptical; bristles on the gape very small, scarcely perceptible; wings long, rather broad, first quill long, the three first quills about equal in length, these being the longest; inner secondaries very long, one being nearly equal in length to the first three primaries; tarsus very long, much longer than the middle toe with the claw, covered in front with four large plates and three inferior scutellæ; tail very long, slender, nearly even or slightly rounded.



1. 2. WHITE WAGTAIL.
MOTACILLA ALBA

3. PIED WAGTAIL.
MOTACILLA LUGUBRIS



1. WHITE WAGTAIL AND PIED WAGTAIL.
(Winter Plumage.)
282

MOTACILLA ALBA.

(WHITE WAGTAIL.)

Ficedula motacilla, Brisson, Orn. iii. p. 461 (1760).
Ficedula motacilla cinerea, Brisson, tom. cit. p. 465 (1760).
Motacilla alba, Linn. Syst. Nat. i. p. 331, "Europe" (1766).
La Lavandière, Buff. Hist. Nat. Ois. v. p. 251, "Europe" (1778).
La Bergeronnette grise, Buff. tom. cit. p. 261, "Europe" (1778).
Motacilla cinerea, Gmel. Syst. Nat. i. p. 961, "Europe" (1788).
Motacilla albeola, Pall. Zoogr. Rosso-As. i. p. 506, "Europe, Russia, and Siberia" (1811).
Motacilla septentrionalis, C. L. Brehm, Vög. Deutschl. p. 347, "N. Germany to Iceland" (1831).
Motacilla sylvestris, C. L. Brehm, op. cit. p. 348, "Germany" (1831).
Motacilla brachyrhynchos, C. L. Brehm, op. cit. p. 348, "East Germany" (1831).
Motacilla dukhunensis, Sykes, Proc. Zool. Soc. 1832, p. 91, "Deccan."
Motacilla brissoni, Macg. Man. Brit. B. i. p. 160, "Continent of Europe" (1846).
Motacilla baicalensis, Swinhoe, P. Z. S. 1871, p. 363, "Lake Baikal."

Lavandière, *Hochequeue grise*, French; *Pispita*, Spanish; *Ballerina*, Italian; *Lic-zak*, *Zakak*, Maltese; *M'sissi*, Arabic; *Mizizi*, Moorish; *weisse Bachstelze*, *graue Wasserstelze*, German; *witte Kwikstaart*, Dutch; *Hvid Vipstjert*, Danish; *Erla Kongsdottur*, Færoese; *Linerle*, Norwegian; *Sädesärla*, Swedish; *Valkonen Västäräkki*, Finnish; *Bieloe Tresogushka*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 652. figs. 1, 2, 674. fig. 1; Werner, Atlas, *Insectivores*, pl. 79; Kjærb. Orn. Dan. taf. xix.; Frisch, Vög. Deutschl. taf. 23. fig. 4; Fritsch, Vög. Eur. taf. 21. fig. 14; Naumann, Vög. Deutschl. taf. 86; Sundevall, Svensk. Fogl. pl. ix. figs. 7, 8; Gould, B. of Eur. pl. 143; id. B. of G. B. iii. pl. 2; Schlegel, Vog. Nederl. pls. 100, 101.

Ad. ptil. æst. fronte, capitis et colli lateribus et corpore subtùs albis: pileo postico cum nuchâ, mento, gulâ et gutture nigris: dorso cinereo, uropygio saturatiore: remigibus nigro-fuscis extùs albido marginatis, secundariis intimis elongatis et tectricibus alarum nigris conspicuè albo marginatis: rectricibus duabus externis utrinque albis, in pogonio interno vix nigro marginatis, reliquis nigris: hypochondriis cinereo lavatis: rostro et pedibus nigris: iride fuscâ.

Ad. ptil. hiem. corpore ut in ptilosi æstivali sed paullo sordidiore, pileo cinereo immixto: corpore subtùs, mento et gulâ albis, his vix sulfureo lavatis, pectore lunulâ nigrâ notato.

Adult Male in spring (Schleswig, April). Forehead nearly to the centre of the crown, and sides of the face and neck pure white; hind crown, nape, chin, throat and upper breast jet-black; back ashy grey,

becoming rather darker on the rump; quills blackish brown, externally narrowly margined with white, the elongated inner secondaries and wing-coverts blacker, and broadly margined with white; tail black, except the two outer rectrices on each side, which are white, narrowly margined with blackish on the inner web; underparts, except as above stated, white; flanks washed with dark ashy grey; bill and legs black; iris dark brown. Total length about 7 inches, culmen 0·55, wing 3·55, tail 3·65, tarsus 0·9.

Adult Female in spring. Resembles the male; but the black on the nape and on the throat does not extend so far down, and the general tone of coloration is duller. One specimen I have from Asia Minor, shot late in April, resembles the male, except that the crown is grey, not black, and the sides of the head are washed with grey. As a rule the female is a little smaller than the male.

Adult in winter (Malta, November). Upper parts as in the male in spring; but the black on the head and nape is intermixed with grey, underparts white, the black on the throat reduced to a crescentic patch on the lower throat, the chin and upper throat being white with a primrose-yellow tinge, which latter also pervades the rest of the white on the head.

Young of the year (Stockholm, 1st October). Resembles the adult in winter; but the upper parts have an olive tinge, the crown is coloured like the back, the sides of the head and throat have a more yellow tinge, and the crescentic mark on the lower throat is narrower.

Tolerably widely distributed throughout the Palæarctic Region, at least as far east as Lake Baikal, the present species is met with in almost all parts of Europe, except in the extreme north; and in the winter season it passes as far south as Senegal, in Africa.

In Great Britain it is a rare bird, being almost entirely replaced by its close ally *Motacilla lugubris*, which is the predominant British species. The White Wagtail, however, not only appears to have been met with as a straggler, but has also bred with us; for Mr. More, in his article on the distribution of birds in Great Britain during the nesting-season, gives several instances on record of its having been found nesting. It appears first to have been recognized as a British species by Mr. F. Bond, who, in May 1841, shot three specimens at Kingsbury reservoir near London; and since then it has been tolerably often, indeed almost regularly, recorded. Mr. Rodd speaks of it as being not uncommon in Cornwall in the summer months; and Mr. Gatcombe informs me that he has shot a few specimens near Plymouth. Mr. A. G. More states that a pair were shot and their nest taken at Freshwater, Isle of Wight, and it has been often obtained on the south coast of England, in Sussex and Kent. Mr. Cecil Smith informs me that he never met with it in Somersetshire, but believes that it has been obtained near Bristol. Referring to its occurrence on the east coast, Professor Newton states that, curiously enough, it does not appear to have been met with in Suffolk or Norfolk; but Mr. Cordeaux says (B. of Humber Distr. p. 42) that he has on two or three occasions during the last ten years met with specimens on the north-east coast of Lincolnshire during the spring migration. Macgillivray obtained it on several occasions in the south of Scotland. Mr. Robert Gray states that he obtained a single example at Dunbar in the winter of 1847; and Dr. Saxby writes (B. of Shetl. Isl. p. 82) that he saw a pair near Lerwick on the 11th June, 1854. In Ireland, Thompson states, it is very rare; Dr. Ball saw a specimen on the 18th June, 1846, at Roundwood, near Dublin; and Professor Newton writes (Yarr. Brit. B. i. p. 549) that Mr. R. Warren, jun., killed one on the Island of Bartra, in Killala Bay, on the 25th April, 1851.

Professor Newton states that it has occurred twice in Greenland, as one was sent from the Southern Inspectorate in 1849, and another was obtained by Dr. Walker at Godhavn in August 1857. It is a tolerably common summer visitant to Iceland and the Færoes, and is numerous in Scandinavia. Mr. Collett informs me that it is everywhere to be met with in Norway from Lindesnæs to the North Cape, and in the fells to as high an elevation as inhabitants are found. It breeds numerously near the coast, generally close to human habitations; and occasionally stragglers remain over winter on the south coast during mild seasons.

Professor Sundevall states that in Sweden this Wagtail is found as far north as settlers have taken up their residence in the wood-region, as for example, at Quickjock, Juckasjärvi, Karesuando, &c., but it does not occur on the fells and in Finmark proper. I observed it everywhere in Finland, where it is a common summer visitant, and the bird most earnestly looked for and welcomed by the peasantry, who say that when the White Wagtail appears they are sure to have summer at once. Throughout Russia in Europe it is common, ranging far north in the Archangel Government, and being very generally distributed; and the same may be said respecting its occurrence in the Baltic Provinces, Germany, France, &c., where it is a summer visitant, though sometimes remaining over winter, especially in the southern parts. Mr. Carl Sachse informs me that it arrives in Rhenish Prussia early in February in mild seasons, and as late as the early part of March in severe ones: thus in 1864 and 1865 the first arrived on the 1st March, in 1866 on the 13th February, 1867 14th February, 1870 3rd February, 1871 2nd March, 1873 5th February, and 1875 7th March, the males always arriving about a week before the females. It seems that it arrives much later than this in Denmark; for, according to Kjærbölling, it arrived at Elsinore in 1829 on the 1st April, in 1837 on the 26th April, and in 1844–46 from the 1st to the 7th April. Mr. Labouchere informs me that it arrives in Holland in March and leaves again in October; and the same may be said as regards the north of France. It is stated by Professor Barboza du Bocage to be common in Portugal; and it is said by the various authors on Spanish ornithology to be numerous in that country in the winter; but Colonel Irby states that he never observed it later than the 16th March in Andalucia. It also both winters and breeds in Italy, but is more numerous during the summer. Mr. C. A. Wright says (Ibis, 1864, p. 62) that in Malta it is "common in autumn, and stays the winter; is seen generally in small flocks, or solitary by the sides of pools and in newly ploughed fields. Leaves early in spring, and is rarely observed in the breeding-plumage." Lord Lilford states that it is resident in Corfu, but that he only observed it on the mainland of Greece during the winter season; and Dr. Krüper says that it winters numerously in Greece, frequenting the plains and the vicinity of the towns, and breeds in the mountain districts. In Southern Germany it is numerous during the summer, but only remains over winter in mild seasons; and the same may be said of Southern Russia. Mr. Goebel, however, says that it rarely breeds in the Uman district. I have received many specimens from Turkey, chiefly shot during passage; and Dr. Krüper informs me that it is common in Asia Minor. Dr. Tristram writes respecting its occurrence in Palestine (Ibis, 1866, p. 290) as follows:—"It is very abundant everywhere in winter, but becomes scarce as the spring advances, and is not seen at all in the south in summer. A few remain to breed in Galilee, where, in the hills, we took the nest." Mr. C. W. Wyatt found it universally distributed on the Sinaitic peninsula; and it is stated to be a common winter

visitant to Egypt, but its numbers rapidly diminish in the spring. Von Heuglin says that it is resident in Egypt, but is much commoner in the winter than in the summer season. He met with it on the Red Sea and the Somali coast only in November and December. In the interior it is a winter visitant only, and ranges as far south as the Upper Abiad, Azrag, and Abyssinia. Mr. Blanford, who met with it in the last-named country, writes (Geol. & Zool. Abyss. p. 380):—"Common both on the highlands and near the coast. I cannot see that the specimens collected by me in Abyssinia show the slightest difference from others shot in Western India and belonging to the supposed species *M. dukhunensis*, Sykes. On the 1st of May there were still specimens on the highlands around Lake Ashangi, but only very few remained. A month earlier they had been numerous." In North-west Africa it is said to be common during winter: Loche records it as numerous in Algeria; and Mr. J. H. Gurney, jun., writes (Ibis, 1871, p. 85) as follows:—"Universally distributed during the spring and winter, but, on the whole, commoner in the Tell than in the Sahara. On one occasion I observed a large flock on a newly ploughed field. They are decidedly gregarious at certain seasons. Numbers were seen one evening at Laghouat, settling to roost in a wet field of wheat. Though it was already the 26th of March, many were still in winter plumage." Mr. Salvin found it common at Tunis in February; Mr. Chambers-Hodgetts met with it in Tripoli; and Favier states (according to Colonel Irby) that "it is the most abundant of the Wagtails near Tangier, arriving during September and October, leaving in March. They are to be seen in large flocks following the plough, twittering incessantly." Swainson records it from Senegal, Verreaux from Casamanse, and Daubeny from Zanzibar. Mr. Godman does not include it in his list of the birds of Madeira and the Canaries; but Dr. C. Bolle states (J. f. O. 1854, p. 455) that it visits the Canaries every winter.

To the eastward the present species occurs at least as far as Lake Baikal. Mr. Blanford says that it breeds in Persia; Mr. A. O. Hume speaks of it as being abundant throughout Sindh. In India its range is somewhat difficult to trace, as it has been confused with allied species, and I find no reliable data to work on. Dr. Henderson did not meet with it in Yarkand; but Severtzoff states that it occurs in Turkestan, but was generally seen on passage. Von Middendorff, Schrenck, and Radde all refer to it as being found in Siberia; but as they unite the present and other allied Asiatic species, it is impossible to decide as to which they speak of without comparing their specimens. It certainly, however, occurs at Lake Baikal; for I possess specimens collected there by Dr. Dybowski which I cannot specifically separate from European examples of *Motacilla alba*. A very closely allied species is *M. ocularis*, Swinhoe, which differs merely in having a narrow dark streak passing through the eye

In its habits the White Wagtail does not in the least differ from our common British species (*Motacilla lugubris*); and what I have written respecting the habits and nidification of that species is equally applicable to the present bird. I may, however, give the following translation of some notes sent to me by Mr. Carl Sachse, of Altenkirchen. "Here," he writes, "this bird is very common. In the spring the males arrive about a week before the females; and they do not immediately resort to their old nesting-places, but wander about in the meadows, where, in bad seasons, they have some difficulty in finding food. Soon after the female arrives the pair take possession of their nesting-place and commence nidification. This Wagtail affects the vicinity of

human habitations, and is by no means shy. It is certainly one of the most elegant of our birds, taking the same place amongst our familiar birds that the Roebuck does amongst the mammals. It always reminds me of a neat pretty country maiden as it trips along—not a town beauty disfigured by crinoline or a long train, but a neat fresh country lass with a short dress and well-turned ankles. As it trips lightly along, the head is held erect, and every now and again it nods slightly and moves its tail. In the breeding-season it may frequently be seen paying its addresses to its mate, with spread tail and the feathers on the crown erected, the wings being also slightly opened; and it is certainly then an elegant and pretty bird. It is, however, quarrelsome towards other birds, and will even follow a Crow or bird of prey, uttering anxious cries. It breeds twice in the season, in April and in June; but I found fresh eggs in 1874 as late as the 29th of July, and on one occasion on the 4th of October. The number of eggs deposited varies from five to seven, five or six being the normal number. With us they nest most frequently in stony places, and therefore are more seldom seen breeding in wooden than in stone houses or in walls or stone-heaps. It is frequently found in company with *Motacilla melanope* and the Dipper, in the vicinity of water-mills, and nests in the banks of the streams or under the bridges, taking care that the nest is well covered above. This spring, however, I took a nest, with five eggs, out of a hole in the ground; and some years ago I found one in a quite open place, in a strawberry-bed. When it nests in the faggot-stacks (as it not unfrequently does here), the Cuckoo often deposits her eggs in its nest. I must, however, not forget to name a rather curious circumstance to you. I was sitting at our window, upstairs, with my wife, and we observed a White Wagtail fly several times in and out of our neighbour's chimney, which was smoking, the fire being on. Doubtless the bird had its nest inside the chimney."

Most of the eggs of this species in my collection are french white, minutely freckled with greyish brown or hair-brown; but some have a buffy tinge, and the freckles are of an olive-brown colour; in size they vary from $\frac{30}{40}$ by $\frac{23}{40}$ to $\frac{34}{40}$ by $\frac{24}{40}$ inch. The nest is similarly constructed to that of the Pied Wagtail, being composed of rootlets, moss, grass bents, and lined with hairs and sometimes a few feathers.

The specimens figured are:—on one Plate an adult male, in full breeding-dress, together with the male of *Motacilla lugubris*, and in the background is a bird of the year of the present species; and on the second Plate an autumn-plumaged bird is figured, with an adult of *M. lugubris* in the same dress. The specimens figured are those above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Christiania, April 12th, 1866 (*R. Collett*). *b*, ♂. Stockholm, September 7th, 1848 (*Meves*). *c*, ♀. Stockholm, October 1st, 1845 (*Sundevall*). *d*. France (*Fairmaire*). *e*, ♂. Piedmont, April 1869 (*Salvadori*). *f*, ♀, *g*, ♂, *h*, ♂. Piedmont, April 1870 (*Salvadori*). *i*, ♂, *j*, ♂, *k*, ♂, *l*, ♀, *m*, ♂, *n*, ♀. Leiden, October 1870 (*Sala*). *o*, ♀, *p*, ♂. Silesia, April 1867 (*Moeschler*). *q*. Jutland, May 1870 (*Benzon*). *r*, ♂. Malta, November 1861 (*C. A. Wright*). *s*, ♂. Olympus, November 26th, 1869 (*Krüper*). *t*, ♂. Ortakeuy, April 2nd, 1869 (*Robson*). *u*, ♂, *v*, ♀. Asia Minor, March 1865 (*Robson*). *w*, ♀. Asia Minor,

March 24th, 1865 (*Robson*). *x*, ♂, *y*, ♂. Asia Minor, October 1867 (*Robson*). *z*, *aa*. Egypt (*E. C. Taylor*). *ab*. Tangier, 1874 (*L. Irby*). *ac*, *ad*. Tangier (*Alcesa*). *ae*, ♀. Lake Baikal (*Dybowski*).

E Mus. Howard Saunders.

a, *juv*. Hesse. *b*, ♂. Murcia, Spain, March 25th (*H. S.*). *c*, *d*, ♂, *e*, *f*, ♀. Valencia, October and November. *g*. Tangier, February.

MOTACILLA LUGUBRIS.

(PIED WAGTAIL.)

Motacilla lugubris, Temm. Man. d'Orn. ed. 2, i. p. 253 (1820, nec 1835, nec 1840).
Motacilla lotor, Rennie, in Mont. Orn. Dict. 2nd ed. p. 377 (1831).
Motacilla yarrellii, Gould, P. Z. S. 1837, p. 74.
Motacilla alba lugubris, Schlegel, Rev. Crit. p. 37 (1844).
Motacilla alba auctt. Britt. (nec Linn.).

Breac-an-t'-sil, Gaelic; *Ballerina nera*, Italian; *Sortrygget vipstjert*, Danish.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 78; Kjærb. Orn. Dan. taf. xix.; Fritsch, Vög. Eur. taf. 21. fig. 22; Naumann, Vög. Deutschl. taf. 377. fig. 1; Gould, B. of Eur. pl. 141; id. B. of G. B. iii. pl. 1.

♂ *ad. ptil. æst. Motacillæ albæ* similis, sed dorso nigro, capite concolori nec cinereo.

♀ *ad. ptil. æst.* mari similis sed minor, dorso saturatè plumbescenti-cinereo nigro notato.

Ptil. hiem. Motacillæ albæ similis, sed corpore suprà conspicuè saturatiore.

Adult Male in summer (Cookham, 23rd April). Hind crown, nape, back, rump, scapulars, lesser wing-coverts, throat, and breast glossy jet-black; forehead, nearly to the centre of the crown, sides of the head and of the neck, and underparts below the breast pure white; quills black, the primaries externally narrowly edged with white, the secondaries and larger coverts being broadly margined with the same colour; the two outer rectrices on each side white, narrowly margined with black on the basal portion of the inner web, the rest of the tail being black; flanks washed with greyish black; legs and beak black; iris dark brown. Total length about 7·5 inches, culmen 0·6, wing 3·6, tail 3·75, tarsus 1·0, hind toe with claw 0·5, hind claw 0·3.

Adult Female. Differs from the male in being somewhat smaller in size, and in having the back dark lead-grey, marked with black, not pure black. In the winter dress it does not differ in coloration from the male.

Adult in winter (Hampstead, 13th October). Hind crown and nape black; back deep lead-grey, mottled with black; rump black; forehead, sides of head and neck, and throat white, slightly tinged with sulphur-yellow; black on the breast forming a crescent with the points directed upwards; underparts white; flanks washed with grey; wings and tail as in the summer dress.

Young (West Drayton, 20th July). Upper parts dull grey, with an olive-buff tinge; margins to the quills and wing-coverts dull buffy white; throat, sides of the neck, and breast buffy white, with a yellowish

tinge, and marked with black on the lower throat and breast; underparts dull white; flanks tinged with yellowish buff.

An older bird, shot on the 6th October, resembles the adult in winter dress, but has the crown and nape coloured like the back, and the crescentic mark on the breast is smaller. In this plumage it very closely resembles the young of *M. alba*, being only a shade darker on the upper parts.

This, our common British species, though so numerous with us, can scarcely be called common anywhere else. It is essentially a West-European bird, but has been found as far south as the western part of North Africa.

With us in Great Britain it is very generally distributed, and is, as a rule, a resident, though some leave us in August or September, and return again in March. From the extreme south of England to the most northern portion of Scotland this Wagtail is a common and generally distributed species, and it is met with as far as St. Kilda and Unst. Mr. Robert Gray says that the Inner Hebrides are in the winter season nearly deserted by the present species, and that in the Outer Islands, including St. Kilda, it appears to be strictly migratory, arriving in March and departing about the end of September. It seems, indeed, that though we have this bird with us throughout the year, a regular southward movement takes place thus: those which winter in the southern districts are the birds which have passed the summer season in the northern portions of our isles, whereas those which breed in the south of England migrate across the channel to seek winter quarters on the continent of Europe; hence the extreme northern portions of Scotland are deserted during the most inclement season of the year. It has been observed by Mr. Cecil Smith on the Island of Guernsey, where it is not uncommon; and in Ireland, as in England, it is very common, and generally distributed throughout the island. It has not been met with in Iceland or the Færoes, but has occurred on the west coast of Norway. Mr. Collett writes that Mr. Schübeler, the parish priest, observed an individual in the summer of 1866 at Aaseral, in Christiansands Stift; and Professor Esmark recorded its occurrence at Christiania in 1859, where it was also seen in 1867 and 1868 by Mr. Feragen. An individual was also observed at Bergen in May 1869, by Mr. Friele; and in a letter just received from Mr. Collett he informs me that another specimen was obtained there in May 1871. It is also recorded from Sweden; but Professor Sundevall cites only one instance of its occurrence; and in Denmark it is said by Kjærbölling to have only once been known to occur, he having obtained an example at Veile in April 1847. It is, however, very probable that it may have oftener occurred and been overlooked; for it has been frequently observed in large numbers during passage at Heligoland. I do not, however, find any recorded instance of its occurrence in Germany; and it is rare in Belgium during migration, only two or three examples having been obtained. In Holland, however, it appears to be of more frequent occurrence; and Heer van Wickevoort Crommelin states that it has been known to pair with *Motacilla alba*. According to Messrs. Degland and Gerbe it "occurs rarely in the north of France, where it probably breeds, as a fine male in full breeding-plumage was shot near Lille in June. It is common in Brittany and in Anjou. M. Millet (Faune de Maine-et-Loire) says that it arrives about the middle of the autumn, and leaves about the end of March, when in full breeding-plumage." Professor Barboza du Bocage speaks of it as being a common bird in Portugal; and

it has also been met with in Spain. Mr. Howard Saunders obtained a specimen at Seville in March 1868; and Colonel Irby remarks that in summer dress it is rare enough in Andalucia, but probably escapes unnoticed in winter plumage. Count Salvadori writes (Ucc. d'Ital. p. 121) that it is of accidental occurrence in Italy, and has been obtained in Liguria and near Venice. In the Turin Museum is a specimen procured in Piedmont. Further east than this it does not appear to have been met with; but it occurs rarely on the southern side of the Mediterranean, being, according to Favier, Colonel Irby says, the rarest of the Wagtails near Tangier, where it is found at the same times and places as *Motacilla alba*. Loche (Expl. Alg. Ois. ii. p. 5) refers to a Wagtail under the name of *Motacilla algira*, Bp., which may possibly be the present species—though, as he lays special stress on the large amount of white on the wings, it is equally probable that it may be *Motacilla vidua*, Sund.

The Pied Wagtail, or Dishwasher as it is very frequently called, affects damp localities in preference to the more elevated dry places, and is most frequently to be met with on the margins of streams, ponds, near ditches, or in damp meadows, especially such places where cattle are pasturing; for, like its allies, it is fond of watching for the insects that are disturbed as the cattle move about grazing or picking amongst the herbage. It may frequently be seen wading in shallow streams or pools in search of worms or insects, or stepping quickly about on the mud or soft sand, carefully holding up its tail to prevent it from being soiled. It walks about with the greatest ease and grace, sometimes running swiftly after an insect, using its wings as it dashes at and catches it, sometimes walking daintily along; or flying a short distance it perches on a stone or some elevated perch, and vibrates its body and tail, uttering its shrill twittering note as it flies off again to recommence its search after food. It may not unfrequently be seen picking amongst the old cow-dung in the pastures, where it finds larvæ of various sorts, or running about close to the cattle and seizing the gnats or flies. It is extremely tame and familiar, and will allow itself to be approached within a few yards without showing any sign of fear, and is therefore easy to shoot. As it feeds entirely on insects of various descriptions, it is an eminently useful and harmless bird, and should be protected from molestation. With us in England it is a resident, but in the winter season it appears to be more numerous in the southern than in the northern portions of Great Britain. At this season it is often seen about in the fields; and when ploughing is going on, it will follow closely after the ploughman in order to pick up the worms and larvæ exposed to view.

Late in March or early in April they have paired and commence the serious business of nidification. The nest is placed in a convenient hole in a wall, in a bank, or stone heap, or, where I have not unfrequently found it, in a faggot stack. The nest is constructed of dried grass-stems, moss, or a few fine roots, and is tolerably well lined with hair, wool, or feathers. Usually it is somewhat heavily built, and scarcely with so much care as that of most of its allies. The eggs, generally five or six in number, are greyish white or French white, closely dotted all over the surface of the shell with greyish brown, and are not, so far as I can see, judging from the series in my own collection, distinguishable from the eggs of *Motacilla alba*. Not unfrequently the nest is built in a curious and, one would almost think, unsuitable locality. Macgillivray speaks of one built in an old wall in a quarry, within a few yards of four men who

during the most part of the day wrought at the limestone, which they occasionally blew up with powder,—and of another which was built below the strike-board at a colliery; and although the hutches filled with coals struck against the strike-board every time they were brought up to the top of the pit, the Wagtails brought their young to maturity without showing signs of being disturbed. This careful observer gives some excellent notes on the habits of this species, from which I extract the following:—"The ordinary note of this species is a sharp cheep. When alarmed or otherwise agitated, it flies about in a wavering manner, uttering a repetition of this note, and alarming the small birds in the neighbourhood. In sunny weather, especially in the mornings, it may be heard singing a pleasant, mellow, and modulated little song. Its flight is light, buoyant, and undulated; it propels itself by a repetition of smart flaps, ascends in a curved line, then ceases for a moment, descends in a curve, repeats the motion of its wings, and thus proceeds as if by starts, and with great velocity. Like many other birds it is not fond of flying down the wind, but prefers an oblique course. In its habits it is quite terrestrial; at least I have never seen it search for food on trees, bushes, or even herbaceous plants, although it not unfrequently perches on a hedge or bush when disturbed in the breeding-season. It is curious to observe this species pursuing its prey in different localities. Thus, if you watch it for some time when it has taken its station among stones or fragments of rock, you cannot fail to be pleased with the activity and dexterity which it displays. There it stands on the top of a stone, quietly vibrating its tail, as if poising itself. An insect flies near, when it starts off, flutters a moment in the air, seizes its prey, and settles on another stone, spreading and vibrating its tail. Presently it makes another sally, flutters about for a while, seizes two or three insects, glides over the ground, curving to either side, and again takes its stand on a pinnacle. Again, you perceive several Wagtails flying in a wavering and buoyant manner over the rushes that skirt a large pool. It is a calm, bright evening; the Coots are swimming about among the reeds and horsetails, uttering now and then their short, loud trumpet-like cry, and the White-rumped Swallows are glancing along, now dipping lightly into the water to seize a fly, then darting here and there amongst the tiny insects that sport over the rank weeds. A Wagtail tries an excursion over the water; and although its flight does not equal that of the Swallow in elegance or velocity, it yet performs its part with considerable grace, flutters here a while, seizing a few insects, sweeps away in a curve, as if to acquire sufficient speed to keep it up without fluttering, turns suddenly, then shoots forth in a straight line—and thus continues for several minutes, until at length, fatigued, it betakes itself to the top of a stone wall, where it rests a little, and then commences a new excursion. Not unfrequently it may be seen running along the roof of a house in pursuit of insects, which it seizes in the manner of the Flycatcher or Redstart. Often also it is to be found among rocks; and it is not uncommon in the streets of country villages, where it searches for insects chiefly along the gutters."

I follow Professor Newton in using the specific title of *lugubris* instead of *yarrelli* for the present species, as there can be no doubt that the bird first described by Temminck under that name is our British Wagtail; and Vieillot almost simultaneously (Encyclop. Méthod. ii. p. 404) used the name in the same sense. In 1835 Temminck (Man. d'Orn. ed. 2, iii. p. 175) substituted for his original descriptions those of a species from Japan, and, though made aware of the

blunder, in 1840 (*op. cit.* iv. p. 620) continued to use *lugubris* in a sense probably still more erroneous.

The specimens figured are a male in full breeding-dress, on the same Plate with *Motacilla alba*, and an autumn-plumaged adult bird, also on the same Plate with *M. alba* in the same stage of plumage, both being British-killed examples, the same that are above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Cookham, Berks, April 22nd, 1869 (*J. Ford*). *b*, ♀. Cookham. *c*, ♀. Cookham, January 21st (*W. Briggs*). *d*, ♂ *ad.*, *e*, *juv.* West Drayton, July 20th, 1869 (*Paraman*). *f*, ♂. Hampstead, April 20th (*Davy*). *g*. Hampstead, September 24th. *h*. Hampstead, October 13th, 1869. *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*. Hampstead, October 1869 (*Davy*). *p*. Tangier (*Colonel Irby*).

E Mus. Howard Saunders.

a, ♂, *b*, ♀. Orkneys, summer (*Dunn*). *c*. Hackford, Norfolk, February 1st. *d*, ♂ *ad.* Seville Market, March 4th, 1868 (*H. S.*).



YELLOWHEADED WAGTAIL.

MOTACILLA CITREOLA.

MOTACILLA CITREOLA.

(YELLOW-HEADED WAGTAIL.)

Die Bachstelze mit dem gelben Bauche (Russ. *Sheltobrjuschka*), Lepech. It. ii. p. 187 (1775).
Motacilla citreola, Pallas, Reise, iii. App. p. 696. no. 14 (1776).
Motacilla citrinella, Pallas, Zoogr. Rosso-As. i. p. 503 (1811).
Motacilla aureocapilla, Less. Orn. p. 422 (1831).
Budytes citreola (Pall.), Bp. Comp. List, p. 19. no. 159 (1838).

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 81; Naumann, Vög. Deutschl. taf. 377. figs. 2, 4; Gould, B. of Eur. pl. 144; Middendorff, Sib. Reise, ii. taf. 14. figs. 4, 5.

♂ *ad. ptil. æst.* capite, collo et corpore subtùs pulchrè citrinis, hypochondriis sordidè cinereo-schistaceis, dorso uropygio et tectricibus alarum minoribus cinereo-schistaceis, dorso indistinctè flavido adumbrato, collo imo postico nigro: remigibus nigricantibus, secundariis intimis elongatis albido marginatis: tectricibus alarum majoribus et medianis nigricanti-cinereis conspicuè albo terminatis: supracaudalibus nigro-schistaceis: rectricibus duabus extimis utrinque albis, in pogonii interni dimidio basali nigro marginatis, reliquis nigris: rostro et pedibus nigris, iride fuscâ.

♀ *ad. ptil. æst.* pileo et nuchâ non citrinis sed flavicanti-cinereis vix brunneo tinctis: regione superciliari, loris et gulâ citrinis, torque in collo postico nullâ: corpore suprà ut in mare sed sordidiore: alis, caudâ et corpore subtùs ut in mare picturatis: capitis lateribus et regione paroticâ cinerescente nigro notatis.

Juv. pileo, nuchâ et corpore suprà sordidè cinereis flavicante brunneo lavatis, pileo magis flavido: fronte et striâ superciliari flavicanti-albidis, regione suboculari et regione paroticâ sordidè cinereis: corpore subtùs albido, pallidè flavo lavato, gutture imo flavo adumbrato et vix grisescente fulvido notato: alis et caudâ ut in adulto picturatis sed sordidioribus.

♂ *ptil. hiem.* fœminæ similis sed corpore suprà saturatiore, fronte flavâ, striâ superciliari majore: pectore et corpore imo subtùs non citrinis sed flavicanti-albidis: gutture imo vix nigro-fusco notato: secundariis et tectricibus alarum sordidè albido, nec albo marginatis et terminatis.

Adult Male in breeding-dress (Lake Baikal, 18th May). Head, neck, and underparts (except the flanks) bright canary-yellow, back, lesser wing-coverts, and rump dark slaty grey, with a faint greenish or yellowish tinge on the back; on the lower neck, where the yellow ends is jet-black, a black collar being thereby formed round the hind neck; quills dull blackish, the primaries with faint lighter edges, elongated inner secondaries black, edged with white, larger and median wing-coverts greyish black, broadly tipped with pure white; upper tail-coverts blackish grey; the two outer tail-feathers on each side white, the basal half of the inner web margined with black, remaining rectrices jet-black, flanks dark slate-grey; legs and bill black, iris brown. Total length about 5·7 inches, culmen 0·65, wing 3·33, tail 3·2, tarsus 1·05, hind toe with claw 0·7.

Adult Female in breeding-dress (Cashmere, 9th March). Crown and nape dull yellowish grey with a brownish tinge, the black collar wanting; back as in the male, but browner, and the wings duller, the white edgings being larger; tail and underparts as in the male; superciliary region, lores, and throat canary-yellow; sides of the head below the eye and auriculars marked with blackish grey; sides of the lower neck slightly marked with black.

Young Male (S.E. Ural, 14th August). Crown, nape, and upper parts dull greyish, washed with yellowish brown, the crown rather more yellow; forehead and superciliary line yellowish white, a broad mark from the bill below the eye and the auriculars dull greyish; underparts dull whitish, with a primrose tinge, lower throat tinged with yellow and slightly marked with dark greyish brown; wings and tail as in the adult female.

A younger bird, which cannot have long left the nest, has the upper parts with darker centres to the feathers, the sides of the crown blackish, a band of black across the lower throat, and the underparts buffy white, the breast washed with yellowish buff.

Adult Male in winter (Etawah, 29th November). Resembles the female in breeding-dress above described; but the upper parts are darker, the forehead is yellow, the supercilium broader, the lower breast and abdomen not bright yellow but primrose-yellow; but the throat and upper breast are canary-yellow, and on the lower throat there are some black markings; the white edgings to the wings are also duller than in the summer plumage.

This Wagtail, first described as distinct by Lepechin (who, however, though he enumerated its specific characters with accuracy, did not give it a Latin name), is an eastern species, inhabiting Northern Asia during the summer and migrating southward into China and India during the winter season. In Europe it is found in the extreme eastern or south-eastern portion of Russia, where it breeds. It has, however, occurred as far west as Heligoland, where, according to Professor Blasius (Ibis, 1862, p. 70), immature examples have been obtained; but, with this exception, it does not appear to have occurred west of Russia, where it inhabits the Ural range, and, according to M. Martin, arrives early in the spring, whilst the lakes are still covered with ice; and when this latter melts it retires to a drier soil, and breeds amongst the marsh-grass. Sabanäeff states that it occurs in the Ekaterinburg district, but does not range higher than about 56½° N. lat.; eastward of Ekaterinburg it gradually becomes commoner. Bogdanoff states that it is found near Kazan. I have specimens collected by Sabanäeff and by Meves in the Southern Ural, which are in almost all stages of plumage; one bird was quite young and could not have long left the nest; but neither of these gentlemen found its eggs. Professor von Nordmann says that it is one of the rarest visitors to Southern Russia, having only been obtained near Taganrog and in the Crimea.

To the eastward it occurs as far as China. Mr. Blanford does not appear to have observed it in Persia, but obtained two specimens in Baluchistan. Dr. Jerdon says (B. of India, ii. p. 226) that during the cold weather it is found all over India, where it is not very abundant, and does not, like the ordinary Grey-headed Wagtail of India, frequent dry places, but is found on the banks of rivers and shores of lakes, and especially in swampy ground or on inundated rice-fields. Mr. W. E. Brooks, who met with it in Cashmere, says that it migrates through that country in May, and that in June all had passed; and Dr. Henderson writes (Lahore to Yarkand, p. 224) that "it was found throughout Cashmere and Ladak, and was noticed as high as 11,000 feet, at

a small lake surrounded by snow on the Zoji-lá Pass. Doubtless the bird breeds in both provinces. The specimens obtained in May, June, and July were all in full breeding-plumage." Severtzoff, who met with it in Turkestan, states that it is there only a migrant, occurring in the south-eastern, south-western, and north-western portions of the country to an altitude of about 3000 to 4000 feet. Here, as in India, Cashmere, and Ladak, there are two distinct forms, which Severtzoff considers only varieties, but which seem to me to be perfectly good species, viz. the present species with a black collar and grey back, and *Motacilla citreoloides*, which, in full plumage, has the upper parts deep velvety black. Where this latter species breeds I cannot say; but it does not appear to have so extensive a range as the present species, as I have never seen it from Dauria or from Russia in Europe—indeed, only from Turkestan, Cashmere, and India. *Motacilla citreola*, however, occurs in Siberia, where Von Middendorff met with it breeding in small numbers on the Boganida in 71° N. lat. Dr. G. Radde, who found it in South-east Siberia, where Von Middendorff did not observe it, says that the first arrived on the Tarei-nor about the 18th April, and on the 30th they were seen paired. In the Eastern Sajan Mountains he first met with it on the Tunka Plain on the 23rd April; on the 8th May it became commoner; and on the 13th of that month it was seen paired. He did not observe it in the autumn. It breeds in Dauria, as I have eggs from there; and Dr. Dybowski says that it is tolerably common. Père David records it as not uncommon in Mongolia in spring; and Mr. R. Swinhoe says (P. Z. S. 1871, p. 364) that he obtained it at Szechuen, in China, and came across a small party of this Wagtail on the Upper Yangtsze in May.

In its habits the present species assimilates closely with the other Wagtails, but appears to be much more of a marsh bird, as it is said to be always found in swampy low localities, and never in dry elevated places. Little is on record respecting its habits or nidification; but some notes by Dr. Dybowski, being the result of personal observation, published by Dr. Taczanowski in the Journal für Orn. (1873, p. 82) are of interest; and I therefore translate them as follows:—"It arrives here (Darasun, Dauria) in the breeding-season, and is very common, appearing in vast flocks about the latter half of April. It places its nest on the ground in swampy places, and hides it most carefully under dry grass, low bushes, or else amongst the moss which grows on the peaty soil. The nest is constructed of this marsh-moss with dry grass-bents, and is strongly and regularly built. It measures 110 millims. in outside diameter, 55 millims. in height, 65 inside diameter, and 35 inside depth. About the latter end of June the female deposits five, rarely six, eggs, in the incubation of which the male bird assists. When one is sitting its mate keeps careful watch in the neighbourhood, and warns the sitting bird when danger threatens. The latter then runs off the nest, and both seek to lure the intruder away. So soon as the danger is over they return to the nest, but not directly, and only with the greatest caution; and therefore the nest is most difficult to find. The best mode is to seek for the nest during drizzling rain, when the female leaves her eggs unwillingly, and does not fly off until nearly trodden on. So soon as the young (which differ greatly from their parents in appearance) are reared, they all leave; but stragglers have been observed as late as the 24th August."

In my collection is a clutch of six eggs of this Wagtail obtained by Dr. Dybowski in Dauria, and sent over here with the birds. In coloration and general appearance these eggs resemble

those of *Motacilla raii*, but are, if any thing, a shade more stone-buff in ground-colour, and are a trifle larger, measuring from $\frac{3}{4}$ by $\frac{47}{80}$ inch to $\frac{3}{4}$ by $\frac{49}{80}$ inch.

The specimens figured are an adult male in full breeding-dress from Dauria, and a young bird from the Ural, these being the specimens described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Kushum, Turkestan, April 7th, 1862 (*Severtzoff*). *b*, ♂. Chinrent, March 26th, 1866 (*Severtzoff*). *c*, *juv.*, *d*, ♂, *e*, ♂, *f*, ♀. Ekaterinburg, Ural, April 1869 (*L. Sabanäeff*). *g*, ♂. Ekaterinburg, Ural, May 25th (*L. Sabanäeff*). *h*, ♀ *juv.*, *i*, ♂ *juv.* S.E. Ural, July 1872 (*W. Meves*). *j*, ♂. Lake Baikal, May 18th, 1869 (*Dr. Dybowski*). *k*, ♀, *l*, ♀, *m*, ♂. Cashmere, April 1871 (*W. E. Brooks*). *n*, ♂. Kokand, March 19th, 1866 (*Dode*). *o*, *p*, *q*, ♂. Etawah, October 22nd, 1869 (*W. E. Brooks*). *r*, ♀, *s*, ♂, *t*, *u*, ♂, *v*, ♂, *w*, ♀, *x*, ♂. Etawah, November 1869 (*W. E. Brooks*). *y*, ♂, *z*, ♂. Etawah, February 1870 (*W. E. Brooks*). *aa*, ♂, *ab*, ♂, *ac*, ♂. Etawah, March 1870 (*W. E. Brooks*).

E Mus. Howard Saunders.

a, ♂. Turkestan, April 4th, 1866 (*Dode*). *b*, ♂, *c*, ♀. Jellallabad, E. India, March 26th, 1872 (*A. Anderson*).

E Mus. H. B. Tristram.

a, ♂. Loyah, India, March 15th, 1871 (*W. E. Brooks*). *b*, ♂. India. *c*, ♂, *d*, ♂. Etawah, India, November 1869 (*W. E. Brooks*). *e*, ♂. Etawah, December 1869 (*W. E. Brooks*). *f*, ♂. Etawah, January 1870 (*W. E. Brooks*). *g*, ♂, *h*, ♂, *i*, ♂, *k*, ♂. Etawah, February 1870 (*W. E. Brooks*). *l*, ♀. Etawah, March 24th, 1870 (*W. E. Brooks*).

MOTACILLA CITREOLA.

APPENDIX A.

When the article on this species was issued I was enabled to give but very meagre details respecting its nidification, gleaned entirely from the notes published by Dr. Dybowski, who met with it breeding in Dauria. Since then I have had an opportunity of examining a very rich series of skins, eggs, and nests collected on the Petchora river, in Northern Russia, by Messrs. Seebohm and Harvie-Brown, this spring (1875). These gentlemen found it, curiously enough, breeding further north than *Motacilla viridis*, and extremely common; and the former of them sends me the following notes, which are the more interesting as they are, I believe, the first published respecting the nidification of *M. citreola* in Europe.

"The Yellow-headed Wagtail," Mr. Seebohm says, "is the commonest bird in summer in the delta of the Petchora. It is most abundant on the willow-swamps on the islands, but is also found in similar situations on the tundra. We were not able to get much information respecting the date of its arrival. We did not meet with it at Ust Zylma; but lower down the river, at Haberiki, we met with a party of five on the 4th of June. The White Wagtail arrived at Ust Zylma on the 12th of May. *Motacilla viridis* arrived on the 17th, and was very abundant both at Ust Zylma and at Haberiki; north of Haberiki it became less and less abundant, whilst *Motacilla citreola* became more so. At Churvinski, near the Arctic circle, both species were making preparations to breed. In the delta *Motacilla viridis* disappeared altogether, whilst *Motacilla citreola* became extremely abundant. It is impossible to imagine that the tens of thousands of these birds in the delta had migrated by way of Ust Zylma and entirely escaped our notice. In the Ornithological Catalogue of the University at Kasan it is mentioned that this bird arrives at Kasan, whilst the common species have young, about the middle of April, and that a few pairs remain until the beginning of June. They probably follow the valley of the Volga to Kasan, thence up the Kama and down the Petchora to the junction of the latter river with the Ussa. Instead of then turning south-west, as the Petchora does, down to Ust Zylma, they will most likely keep a nearly north course and reach the delta up the valley of the Ussa and across the tundra.

"The Yellow-headed Wagtail builds its nest in the long grass which soon covers the open spaces between the willows after the floods caused by the sudden melting of the snow and the breaking-up of the ice have subsided. The nest is very difficult to find; but we succeeded in securing ten. They were built of dead grass with almost always a feather or two somewhere, and generally, but not invariably, lined with the hair of cows or reindeer. Five was the usual complement of eggs; but one or two nests contained six. The first eggs we obtained on the 19th of June; a month later we caught a young bird scarcely able to fly; and by the 1st of August fully fledged young were abundant. The male appears to take its turn in the duties of incubation; and both birds are noisy enough when you approach the nest, the male frequently flying up to the intruder, singing defiantly in the air. We did not meet with this bird on the

shores of the lagoon beyond the islands of the delta. Both the call- and the alarm-note of this bird, as well as the low chattering song, are very similar to those of *Motacilla viridis*. We brought home about sixty skins of this bird, and could easily have got ten times that number if we had had time to prepare them. They were very tame; and it was no uncommon thing for half a dozen or more birds to be within shot on various conspicuous twigs of the willows at the same time. Comparatively few of the males were in complete adult summer dress, most of them having more or less of black streaks on the head; and several of both sexes showed traces of the gorget of spots on the lower throat characteristic of immature birds. There is not much variety in the size or colour of the eggs: some are bluer than others; and the spots of some are more confluent than usual."



GREY WAGTAIL.

MOTACILLA SULPHUREA

692

MOTACILLA MELANOPE.

(GREY WAGTAIL.)

The Grey Water-Wagtail, Edw. Gleanings, v. p. 105, pl. 259, "England" (1758).
Ficedula motacilla flava, Briss. Orn. iii. p. 471, pl. xxiii. fig. 3 (1760).
Motacilla flava, Scop. Ann. I. Hist. Nat. p. 153 (1769, nec Linn.).
Motacilla melanope, Pall. Reis. Russ. Reichs, iii. p. 696, "Dauria" (1776).
La Bergeronnette jaune, Buff. Hist. Nat. Ois. v. p. 268 (1778).
Tschutschi Wagtail, Penn. Arct. Zool. ii. p. 397, "Tschutschi coast" (1785).
Motacilla tschutschensis, Gm. Syst. Nat. i. p. 962, "Tschutschi coast" (1788).
Motacilla boarula, Gm. tom. cit. p. 997 (1788, nec Scop.).
Motacilla sulphurea, Bechst. Gemeinn. Naturg. Vög. Deutschl. ii. p. 459, "Europe and Asia" (1807).
Pallenura (*M. melanope*), Pall. Zoogr. Rosso-As. i. p. 500 (1811).
Motacilla cinerea, Leach, Syst. Cat. M. & B. Brit. Mus. p. 22, "England" (1816).
Motacilla bistrigata, Raffles, Trans. Linn. Soc. xiii. p. 312, "Sumatra" (1821).
Calobates, Kaup (*Motacilla sulphurea*, Bechst.), Natürl. Syst. p. 33 (1829).
Motacilla montium, C. L. Brehm, Vög. Deutschl. p. 345, "Germany" (1831).
Budytes boarula, Eyton, Cat. Brit. Birds, p. 15, "England" (1836, nec Scop.).
Motacilla xanthoschistos, Hodgs. in Gray's Zool. Misc. p. 83, "Nipal" (1844).
Pallenura sulphurea (Bechst.), Bp. Cons. Gen. Av. i. p. 250 (1850).
Pallenura javensis, Bp. tom. cit. p. 250, "Java" (1850).
Motacilla montana, C. L. Brehm, Vogelfang, p. 143, "Germany" (1855).
Motacilla rivalis, C. L. Brehm, ut suprà, "Germany" (1855).

Bergeronnette jaune, French; *Alvelõa amarella*, Portuguese; *Ballerina gialla*, Italian; *Zakak-ta-del*, Maltese; *graue Bachstelze*, *Winter-Bachstelze*, German; *groote gele Kivikstaart*, Dutch; *Gråärla*, Swedish; *Seraya tresoguska*, Russian.

Figuræ notabiles.

Edwards, *l. c.*; D'Aubenton, Pl. Enl. 28. fig. 1; Werner, Atlas, *Insectivores*, pl. 80; Fritsch, Vög. Eur. taf. 17. figs. 13, 14; Naumann, Vög. Deutschl. taf. 87; Gould, B. of Eur. pl. 147; id. B. of G. B. iii. pls. 6, 7; Schlegel, Vog. Nederl. pl. 103.

♂ *ad. ptil. æst.* pileo, capitis lateribus et corpore suprà saturatè cinereis, dorso vix olivaceo tincto, uropygio supracaudalibusque viridi-flavidis: remigibus nigricantibus, secundariis ad basin albis, intimis brunneo marginatis: tectricibus alarum majoribus nigricantibus cinereo marginatis, minoribus dorso concoloribus: rectrice extimâ utrinque albâ, duabus sequentibus albis sed in pogonio externo ad basin et fere ad apicem nigris, rectricibus reliquis nigricantibus vix flavo-viridi marginatis: mento et gulâ nigris utrinque striâ albâ indistinctâ notatis et striâ distinctâ supra oculum ductâ: corpore subtùs

reliquo flavo, hypochondriis cinereo lavatis: rostro nigricante: pedibus brunnescenti-incarnatis: iride nigro-fuscâ.

♀ *ad.* mari similis sed sordidior, gulâ nec nigrâ sed albâ vix nigro notatâ.

Ptil. hiem. corpore suprà saturatè cinereo vix olivaceo tincto: striâ superciliari flavicanti-albidâ: gulâ albâ: pectore rufescenti-ochraceo: corpore subtùs reliquo pallidè sulphureo, sed crisso et subcaudalibus lætè flavis.

Adult Male in summer (Derbyshire). Crown, nape, sides of the head, and entire upper parts dark ashy with an olive tinge on the back; rump and upper tail-coverts greenish yellow; quills blackish, secondaries white at the base, and with narrow light-brown edgings to the inner feathers; larger wing-coverts blackish, with dull ashy edgings, smaller coverts coloured like the back; outermost tail-feather white, the next two on each side white, with the outer web, except towards the tip, blackish, the remaining feathers being blackish with greenish yellow narrow edgings, which become broader towards the base of the feather; chin and throat black, a streak over the eye, and another indistinctly defined streak on each side of the black throat, white; rest of the underparts canary-yellow, brightest on the under tail-coverts; flanks washed with grey; bill blackish; legs dull fleshy brown; iris blackish brown. Total length about 7 inches, culmen 0·6, wing 3·25, tail 3·9, tarsus 0·85.

Adult Male in autumn (Cookham, Berks, 20th September). Upper parts dark ashy with an olive tinge; wings and tail as in the summer dress, except that the margins to the secondaries are rather larger; rump yellowish green; the streak over the eye rusty yellowish white; throat white; breast rusty ochre; rest of the underparts sulphur-yellow, except the under tail-coverts and crissum, which are rich canary-yellow.

Adult Female in spring (Lake Baikal, 26th May). Differs from the male in having the upper parts rather duller in tinge, and the underparts of a slightly paler shade of yellow, and the throat is greyish white, with one or two blackish feathers on the chin. Several adult females in my possession agree closely with this specimen; but old females appear to have the throat more mottled with colour.

Adult Female in autumn. Differs very slightly from the male, being a little duller in colour and a trifle smaller in size.

Young. A young bird which had just left the nest, shot by myself at Staufen im Breisgau, had the upper parts grey with a slight greenish tinge, the rump greenish yellow, a yellowish white streak passes over the eye, and under the eye there is an indistinct white mark; wings and tail as in the adult, but the secondary coverts have greyish tips; underparts greyish white with a primrose tinge; lower tail-coverts pale yellow; fore neck marked with greyish; breast washed with pale reddish grey; bill dark brown; legs pale fleshy grey; claws dark brown.

Obs. Many recent authors have treated the Eastern or Asiatic form of the present species as distinct, under the name of *Motacilla melanope*; and I thought that this view was the correct one, and that our bird would stand under the name of *M. sulphurea*, until I examined a larger series from various localities. The distinctive character claimed for the eastern bird is, that its tail is said to be constantly shorter; but I find that examples from the Azores have, as a rule, shorter tails than Asiatic specimens, and from Turkey I have birds with tails as long as any from England, and others with as short tails as birds from Siberia. The shortest tail is that of an old full-plumaged male from the Azores, as it measures only 3·5 inches. The length of the tails in the specimens now before me varies as follows:—Madeira and the Azores,

seven specimens, 3·5 to 3·8 inches; Great Britain, ten specimens, 3·9 to 4·2, the average being about 4·05; Bulgaria, one specimen, 3·9; Turkey in Europe and Asia Minor, twelve specimens, 3·7 to 4·2, the average being about 3·9; Chimkent, one specimen, 3·75; Etawah, one specimen, 3·6; Lake Baikal, one specimen, 3·8; China, two specimens, 3·55 and 3·9; Java, one specimen, 3·8. From this it will be seen that the length of the tail cannot be taken as a characteristic distinction; and in any other respect I can detect no difference between Asiatic and European birds. Specimens from the Azores and Madeira are the most aberrant, as the colours are so intense, and the black on the throat so deep in colour; but I cannot trace any specific distinction between them and examples from the continent of Europe. They have the white streaks on the side of the head, over the eye, and bordering the throat very slightly defined, being scarcely visible in some specimens, but always present. Lord Walden has given (Trans. Zool. Soc. ix. p. 197) a very complete table of measurements of specimens in his collection from various localities, which agree tolerably well with mine; but he appears to take the measurements rather fuller than I do, and he has not had any of the short-tailed specimens from Turkey, of which I possess three, the tails of which measure 3·7, 3·8, and 3·9 inches respectively, whereas he gives 4·12 as the length of the tail of the shortest-tailed Turkish specimen.

The range of the present species is very extensive; for it is met with in Europe as far north as the British Isles and Northern Germany, occurs in Northern Africa, and is met with in Asia as far east as Japan, and as far south as Java.

In Great Britain it is, as a species, a permanent resident, though individually a partial migrant; for many young birds leave for the south in the autumn. Being a bird that only frequents localities where running water is found, and disliking the plains, it is somewhat locally distributed, especially during the breeding-season. In the south-western counties it breeds only in small numbers, but has been found nesting regularly in Cornwall and on Dartmoor. In a note received from Mr. J. Gatcombe, he says, "many of this species remain in Devon and Cornwall the whole year, and may be found breeding by the sides of all our rivers and moorland streams, frequently under the arch of a bridge. During autumn and winter they may be seen in the towns and by the sea-side." Mr. A. C. Stark tells me that he has found it breeding in Devonshire, more commonly on all the Dartmoor streams than in any district he has visited, either in Scotland or North Wales. Mr. Cecil Smith also informs me that he believes it breeds in the Channel Islands, as he saw several when on a visit to Guernsey and Sark in June and July. In Somersetshire, he adds, it certainly remains to breed; for he took its nest, and has also seen it about at various times during the summer. From October to April, it is common in that county; but its breeding-haunts are chiefly in the northern portions of our island. Professor Newton says that "a line drawn across England from the Start Point, slightly curving to round the Derbyshire hills, and ending at the mouth of the Tees will, it is believed, mark off the habitual breeding-range of this species in the United Kingdom." Mr. A. G. More gives instances of its having been occasionally met with nesting in Dorset, Bucks, and Gloucester, and says that it is believed to breed in Wilts, Hants, and Kent; and he adds it is found on the streams of North Wales. In Scotland, according to Mr. Robert Gray, it is resident in the western districts, but does not occur in the Outer Hebrides, though it is found on the inner islands, being not uncommon during winter in Islay and Skye. On the mainland it ranges from Sutherlandshire to the shores of Wigtownshire; and it is occasionally seen, Dr. Saxby says, in small numbers in Skye in August and September, but he has not found it breeding

there. In Ireland it is generally distributed in suitable localities, though not found everywhere throughout the country. It has not been met with in Iceland, the Færoes, or Norway, and it has only once been obtained in Sweden. Nor has it occurred in Finland; but it is found in Central Russia, near Moscow, though it does not range as far as the Jaroslaf Government. Mr. Sabanäeff says that, strange to say, it is more frequently met with in the Northern than in the Southern Ural. It is very common in the Pavdinskaya Dacha; and, according to Teplouhoff, it breeds on the left shore of the Kama, in about 58½° N. lat. Southward of Ekaterinburg it is more rarely met with. I have no data respecting its occurrence in Poland or the Baltic Provinces; it appears doubtful if it breeds in Pomerania or Prussia; and, according to Borggreve, it has only once occurred in Posen. Though not very numerous in Saxony, it may, Dr. Rey says, always be found in suitable localities, and some few remain over the winter.

According to Boie it has also been once met with at Kiel, in Holstein; but Mr. Benzon informs me that it has never been known to occur in Denmark. In Western Germany it is not uncommon, and I have frequently met with it in Rhenish Prussia. Mr. Sachse tells me that it appears at Altenkirchen in March, or in mild seasons in February, generally singly, but sometimes in pairs, remains to breed, and leaves again in October, some few remaining throughout the winter. In the Black Forest I found it in June very common on all the mountain-streams; but where these reach the plains it is no longer seen. In Belgium it breeds in the hilly and mountainous districts, and during the winter frequents the unfrozen streams on the plains; and Mr. Labouchere informs me that in Holland it is seldom seen in any province but that of Guelderland, where it breeds. In the northern and more level portions of France it only occurs in autumn and winter; but in the hilly and rugged districts, such as the Basses Pyrénées and the Basses Alpes and the Var, it is resident. Professor Barboza du Bocage speaks of it as being resident in Portugal; and it is found at all seasons of the year in Spain. Colonel Irby says that "in Andalucia they are most abundant on passage and during the winter months; but many pairs nest along the mountain-streams of the sierras." Mr. Howard Saunders writes (Ibis, 1871, p. 215) that it "was often observed at Malaga in winter; and in the Sierra Nevada and other ranges it is abundant along the mountain-torrents." And in a note from Mr. A. C. Stark, this gentleman informs me:—"it breeds very commonly on all the rocky streams in the Sierra del Nino, in Andalucia. There is generally a nest near each waterfall or mill-wheel. On an average I should say there were a pair of birds to every half mile of stream. On the 9th April I pointed out a nest to Colonel Irby; it was snugly ensconced in the hole of a rock on a stream that crosses the Tarifa-road, not far from Algeciraz. The bird was sitting; but I was unable to examine the contents of nest, as it was at such a height as to be inaccessible without the help of a ladder." In Savoy the present species of Wagtail is also resident and numerous; and it occurs throughout Italy in suitable localities, though it is nowhere numerically abundant. In Sicily it is more numerous in winter, but some remain throughout the year; and it is said to be resident in Sardinia. Mr. C. A. Wright records it from Malta, and says (Ibis, 1864, p. 62) that it "arrives about the middle of September, and is common in October, a few remaining till March. Always solitary or in couples, it is very partial to shady spots by the side of running water and the seashore. It breeds here in April." It was considered by both Von der Mühle and Lindermayer to be a winter visitant only to Greece; and the former observes that he obtained a specimen

which had the tail at least an inch longer than any other example he obtained there; but there is now no doubt that it breeds in Greece, as will be seen from the notes below by Mr. Seebohm, who found its nest in the Parnassus.

In the south of Germany it is a partial resident; for it breeds on many of the mountain-streams, and remains over the winter in places where the streams are not frozen. The late Mr. E. Seidensacher informed me that it was found by him regularly breeding near Cilli, in Styria; and Dr. A. Fritsch says that it breeds near Prague, in Bohemia.

When travelling in Wallachia and Servia I frequently observed it on the mountain-streams, and took its eggs near Ilovetz in the former country. I also observed it not far from Rustchuk, and have received many specimens collected near Constantinople by Mr. Robson. Professor von Nordmann states that it is tolerably common in the south of Russia, where it is distributed throughout Bessarabia, New Russia, all the eastern Black-Sea provinces, and the Crimea. Dr. Krüper does not appear to have met with it in Asia Minor; but Canon Tristram states (Ibis, 1866, p. 290) that it is common in winter in Palestine, but leaves in February, long before it assumes the nuptial dress. Mr. C. W. Wyatt observed it in the peninsula of Sinai, where he met with a pair at the lower end of Wady Hebrán.

In North-east Africa it is found during the winter season. Mr. E. C. Taylor saw it at Cairo in January; Mr. J. H. Gurney, jun., informs me that he twice observed it in the Delta of the Nile in February; Dr. Leith Adams met with it in Nubia in the winter; and Mr. Blanford, who remarks that it was not common in Abyssinia, states that he obtained one specimen in the Lebka valley in August. It is stated by Loche to be common in Algeria during the two seasons of passage; and, according to Colonel Irby, Favier says that it is a common winter visitor near Tangier, appearing in September and October and departing in February and March. It is also a common resident in the Canaries and Azores; and Mr. Godman writes (Ibis, 1872, p. 176) as follows:—"This beautiful species is exceedingly common in all three of the Atlantic archipelagoes; wherever there is a pool or stream of water, a pair of them are sure to be seen, actively engaged in catching the insects which abound in such localities. Webb and Berthelot, and also Bolle, in his first paper on the birds of the Canaries, have mistaken it for *M. flava*, though the latter has corrected this error in his second paper."

To the eastward the present species is found as far at least as Japan. Mr. Blanford obtained three examples in Persia, two of which belonged to what is generally considered the European form, having the tail long; and the third had the tail short, but rather imperfect. Mr. A. O. Hume, who records it as common in Sindh, adds that he cannot, after having examined a large series, discover any valid constant difference; and in this I fully agree with him. Dr. Jerdon writes (B. of India, ii. p. 220), "it is migratory in India, appearing about the end of September, and remaining till the first week of May or so. It is spread throughout all India and Ceylon, but is most general in the hilly and wooded parts, and rare in the open country, especially towards the south of India, in the Carnatic, and the bare tableland, being apparently more abundant in Bengal and the north of India." Mr. W. E. Brooks met with it in Cashmere, where, he says, (J. A. Soc. Beng. 1872, p. 73), it breeds plentifully on the streams, at an elevation of above 6000 feet; and Severtzoff states that he found it breeding throughout Turkestan, at an elevation of from 4500 to nearly 10,000 feet above the sea-level. In Siberia it is found widely

distributed. Von Middendorff observed it in May in the Stanowoi Mountains, and found it also common on the coast of the Sea of Ochotsk. Mr. Maack obtained it as far north in Siberia as Wilni, in about 63°–64° N. lat.; and Von Schrenck records it as one of the commonest species of Wagtails throughout the Amoor country. Dr. G. Radde says that he frequently met with it in the Eastern Sajan and the Daurian elevated steppes, but seldom on the Central Amoor and in the woods near the Baikal Lake. At the Tarei-nor the first arrived on the 5th of May (old style), and in the autumn they had nearly all disappeared on the 4th September. Père David observed it in Mongolia; and Mr. Swinhoe met with it in China, on the island of Formosa, and at Hainan, during the winter season, when, he says, it was common. Temminck and Schlegel record it from Japan; and Captain Blakiston states (Ibis, 1862, p. 318) that he obtained a specimen at Hakodadi in August. It has been met with in Asia at least as far south as Java, whence I possess a specimen; and Mr. Davison states (Stray Feathers, ii. p. 237) that he observed about half a dozen on the Andaman Islands and one on the Nicobars. Lord Walden, in his paper on the ornithology of the Philippines, says that he has specimens from Luzon, Zebu, Malacca, and Java.

During the summer season the Grey Wagtail is essentially a mountain bird, frequenting the rocky burns and small swift-running brooks that rise out of the mountains and flow down to the plains. I have never seen it away from the water, and never in the plains themselves, though it is met with in the mountain-slopes on the very edge of the latter. In Staufen, near Freiburg, I observed it this summer in the town itself, through which a stream runs, and in all the small streams which flow from the adjacent mountains; but about a mile out of the town, in the valley of the Rhine, it was no longer met with, being replaced by *Motacilla alba*. Though a somewhat shy bird, especially when it finds itself pursued, it frequently builds in inhabited places, such as water-mills, and I could always watch from the window of the inn where I was staying in the middle of the town a female carrying food to her young, which were somewhere in an old mill adjoining the inn. Before I left, the young had left the nest, and were to be seen on the banks of the brook below the town, where I shot one for examination. I have several times taken the nest of the present species, which I have generally found either under an overhanging bank close by the water-side, or else under a stone bridge, in a convenient cranny amongst the stones: but it sometimes breeds far distant from the water; for Mr. Cecil Smith informs me that he took a nest in a stone wall in Somersetshire at a considerable distance from water, and Mr. Carl Sachse found a nest near Altenkirchen, in Rhenish Prussia, fully eight hundred yards from the nearest water. Writing to me respecting the habits of this species as observed by him there, he says:— "it always frequents running water, especially where the water is shallow and the bed of the brook is stony. When not pursued it can scarcely be called shy; but if it finds itself watched it will go miles away from its usual haunts. Its call-note is *sziszi* or *zisz*, rather sharply uttered. I have frequently examined the stomachs of specimens I shot, and have always found them to contain flies, gnats, water-insects, and larvæ of various kinds. It frequents the same localities as the Dipper, and appears at its nesting-place in March. It breeds twice in the season, but does not raise the second brood in the same nest which has served for the first. I have taken its eggs, from four to six in number, from the 10th April to the 19th June; and from one pair I took four clutches of eggs, and they laid again for the fifth time in the season and reared their young.

I usually find the nests in holes in the old walls of water-mills, and have always remarked that they will nest in the same place year after year, even if they have been disturbed. The nest is always placed where it is well covered over; but the eggs may usually be seen from outside. It is usually placed close to the brook, and I have only twice found nests far distant from water. Eggs which I have taken differ considerably both in size and colour; for I have some which are as big as those of *Motacilla alba*, which they closely resemble, and others which are scarcely as large as those of *Motacilla flava*. The ground-colour is greenish white or brownish white; and in some there is a wreath of obsolete spots round the larger end, and some have a few brownish black streaks."

Eggs in my own collection, from Germany and England, are dull dirty white in colour, with a slight stone-yellow tinge, faintly freckled or marbled with pale yellowish brown. In size they vary from $\frac{25}{40}$ by $\frac{20}{40}$ to $\frac{31}{40}$ by $\frac{22}{40}$ inch.

I am indebted to Mr. H. Seebohm, of Sheffield, for some interesting notes on the present species, as follows:—"The Grey Wagtail has always been one of my special favourites. In spite of his name the delicate brilliancy of his plumage entitles him to be considered one of our most elegant European birds. All his movements correspond. Nothing can be more graceful than the way in which he will run along the margin of a still pool, leaving the impression of his delicate feet on the sand, or daintily flit from stone to stone in the running stream. He rarely, if ever, frequents pastures, as the Pied Wagtail is fond of doing; nor have I ever seen him on the lawn, or in the farm-yard; he confines himself almost entirely to rivers and brooks. I first became acquainted with these charming birds in the neighbourhood of Saffron Walden. Between this town and Audley End lies Lord Braybrooke's park; a winding brook runs through it, by the margin of which you might stroll any winter's morning with the certainty of seeing one or two pairs of Grey Wagtails. They were regular winter migrants, appearing about the middle of October, and disappearing as regularly towards the end of March. Every autumn the Fieldfare, the Redwing, the Royston Crow, and the Grey Wagtail were the most conspicuous heralds of winter; and every spring they vanished as completely.

"I next met with this bird among the Derbyshire moors, near Sheffield, but this time as a summer visitor. You may stroll along the banks of the Derwent any summer day, from Ashopton to Yorkshire bridge, with a certainty of seeing one or two pairs of Grey Wagtails, and almost with the certainty of finding one of their nests. The river is broad, and full of rocks and stones; and the banks are often steep and rocky. A good fly-fisher wading up stream will, on a lucky day, soon fill his creel with trout, and have ample opportunities of watching the Sandpiper, the Dipper, and the Grey Wagtail, which all breed close to the river-side. The Pied Wagtails are especially numerous, flitting from stone to stone, allowing you to approach almost close to them before they will fly off to another stone, or perhaps to a tree, uttering their alarm-note, *chiz-zit*, *chiz-zit*. The Grey Wagtails are much less numerous, and very much more shy; and if you wish to watch their graceful movements, you must conceal yourself or be very quiet. In their habits they resemble the other Wagtails, running very rapidly and gracefully, continually moving their tails up and down, and now and then taking a snatch at an insect, assisted by a slight effort of the wings, and displaying at the same time the yellowish green of the upper tail-coverts, and the conspicuous white feathers in the tail. When alarmed they will generally fly up from the

stream with an undulatory desultory flight, and as often as not take refuge in a tree, from which, if you happen to be too near their nest, they will keep up an incessant *hoo'-in, chiz'-it*, the last syllable sometimes repeated. As the summer advances they leave the localities where they have reared their young, as I believe most other birds do, and, still following the streams, slowly migrate towards warmer regions. Late in the summer I have seen them on the stones in the Porter and the Don, sometimes running along the roof of a steel-warehouse by the river-side in the centre of Sheffield. I have almost always found the nest of the Grey Wagtail under an overhanging ledge of rock, built upon the clay or rocky bank, and well concealed behind grass or other herbage. Once only I saw one built in the fork of three stems of alder, close to the ground, almost overhanging the river-side. On the 20th of May, 1871, I took a stroll along the banks of the Derwent with my friend Mr. Charles Doncaster, who was to show me a Grey Wagtail's nest, from which he had taken four eggs the previous day, substituting four Wren's eggs for them. The nest, he told me, was lined as usual with white cow's hair. We were surprised to find the four Wren's eggs gone, the lining of the nest having been ejected with them. A fifth Grey Wagtail's egg had been laid in the damaged nest, which turned out to have been built upon the ruins of an old Thrush's nest containing broken egg-shells. A little further down the river we found a second Grey Wagtail's nest, containing five young birds, built upon a bank where we had searched in vain a fortnight before, guessing from the movements of a pair of birds that they must have a nest not far off. The Grey Wagtail seems to have a great attachment to its favourite breeding-places. I have found the nest year after year upon the same ledge of a rocky bank. The eggs are laid towards the end of April or early in May. The nest is very similar to that of the Pied Wagtail, a trifle smaller inside, and perhaps a little deeper and more carefully made. It is almost entirely composed of fine roots, with a few stalks of dry grass in the outer and coarser portion, and is lined with cow's hair, the preference being given to white. I have never seen any feathers used. Five seems to be the usual complement of eggs.

"In the spring of 1873 I had the pleasure of renewing my acquaintance with this charming bird in the classic region of the Parnassus, in a locality very similar to the wilder Derbyshire dales. The little village of Agoriane, between three and four thousand feet above the level of the sea, enjoys a climate very similar to that of the high Peak of Derbyshire. The foliage in the neighbourhood is also very similar. Here you meet with the hawthorn, the oak, and the holly, as well as the bramble, ivy, and the dog-rose. Many of the birds, too, are the same. Not far from the village flows a mountain-stream, conveying the melted snow of the Parnassus down to the Topolais marsh—the Dead Sea of Greece. This stream runs at the bottom of a deep mountain-gorge, singularly wild and picturesque, in many places all but inaccessible, and frequently concealed by dense foliage. I explored its course for some distance, up into the pine-region, and down almost into the valley, the region of the vine, and could almost fancy myself to be scrambling in one of the wilder branches of the Derwent. I found my old friend the Dipper breeding exactly as if he were in Derbyshire; and keeping him company was my special favourite the Grey Wagtail. The nests of the latter were in similar situations to those I have described, but the materials slightly varied. Moss and soft grass took the place of roots; and the lining of hair was very thick, as if to protect the young birds from the night air, which is so much colder in the Parnassus than in Derbyshire. Of one nest I noted down at the time that it was pro-

fusely lined with black goat's hair, but that the bird followed the Derbyshire fashion of a final lining of white hair. In all the nests I found, the number of eggs was five, the same as with us. There were also the same two varieties of colour—one in which the ground-colour was pale grey tinged with blue, the other of a warmer tint, more nearly approaching cream-colour; and many of the eggs had also the one or two black streaks at the large end which I have often seen in Derbyshire eggs. I have seen the same black hair-like streaks in eggs of the Yellow and the Black-headed Yellow Wagtails, to which birds, judging from the eggs, the Grey Wagtail is much more nearly allied than it is to the Pied and White Wagtails. I obtained several nests of fresh-laid eggs in the middle and end of May; but these appeared to be second broods, as I shot several young birds of the year. Dr. Krüper told me that the migrations of the Grey Wagtail in Greece are similar to those of our English birds. In summer it frequents the mountain-gorges, and in winter is found on the banks of the streams in the valleys."

The specimens figured are an adult male in full breeding-dress, and an old male in autumn plumage.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, ♂. Cookham, Berks, September 26th, 1867 (*W. Briggs*). *c.* Highgate, September 6th, 1869 (*Davy*). *d,* ♂. Cookham, September 20th, 1868 (*W. Briggs*). *e,* ♂. Cookham, January 5th, 1869 (*W. Briggs*). *f, g.* Highgate, October 1869 (*Davy*). *h.* Hampstead, November 18th, 1867 (*Davy*). *i.* Bulgaria (*T. E. Buckley*). *k, l,* ♀. Guiken, Asia Minor, March 1865 (*Robson*). *m,* ♂, *n,* ♀. Arnoutkeuy, Turkey, December 1865 (*Robson*). *o,* ♂. Arnoutkeuy, September 1866 (*Robson*). *p,* ♂ *ad.* Asia Minor, March 1867 (*Robson*). *q,* ♂ *ad.* Guiken, Asia Minor, March 29th, 1867 (*Robson*). *r,* ♂ *ad.* Chimkent, April 12th, 1866 (*Severtzoff*). *s,* ♂. Etawah, India, March 29th, 1875 (*W. E. Brooks*). *t,* ♀. Lake Baikal, May 26th, 1869 (*Dybowski*). *u.* Tientsin, China (*Whitely*). *v.* Java (*Frank*).

E Mus. H. B. Tristram.

a, ♀. Sidon, December 1863. *b,* ♂. Palestine, December 1863. *c.* Engedi, February 2nd, 1871 (*H. B. T.*).

E Mus. Howard Saunders.

a, ♂ *ad.* N. Wales, summer. *b,* ♂. Basses Alpes, summer. *c,* ♀. Andermatt. *d,* ♂. Ortakeuy, March 29th. *e,* ♂. Ortakeuy, September 9th (*Robson*). *f,* ♂. Valencia, November 2nd, 1871.

E Mus. Salvin and Godman.

a, b, c, d, ♂. Flores, Azores, May 1865 (*F. D. Godman*). *e, f,* ♂. St. Michael's, Azores (*F. D. G.*). *g,* ♂, *h,* ♀. Madeira, June 19th, 1871 (*F. D. G.*). *i,* ♂. Longshaw, Derbyshire (*O. Salvin*). *k.* Constantinople. *l, m, n.* Asia Minor (*Robson*). *o.* Amoy, China (*R. Swinhoe*).



1. 2. BLUEHEADED WAGTAIL.
MOTACILLA FLAVA.

3. GREYHEADED WAGTAIL.
MOTACILLA VIRIDIS.

MOTACILLA FLAVA.

(BLUE-HEADED WAGTAIL.)

Ficedula motacilla verna, Briss. Orn. iii. p. 468 (1760).
Motacilla flava, Linn. Syst. Nat. i. p. 331, "Europe" (1766).
Motacilla boarula, Scop. Ann. I. Hist. Nat. p. 154 (1769).
Motacilla campestris, Pall. Reise Russ. Reichs, iii. p. 696, "Russia" (1776).
Parus luteus, S. G. Gmel. Reise, iii. p. 101, pl. 20. fig. 1, "Astrachan" (1774).
?*Parus caspicus*, S. G. Gmel. tom. cit. p. 102, pl. 20. fig. 2, "Caspian" (1774).
La Bergeronnette grise, Buff. Hist. Nat. Ois. v. p. 261; Pl. Enl. 674. fig. 1 (1778).
La Bergeronnette de printemps, Buff. tom. cit. p. 265; Pl. Enl. 674. fig. 2, "Europe" (1778).
La Bergeronnette de l'Isle de Timor, Buff. tom. cit. p. 275, "Timor" (1778).
Motacilla chrysogastra, Bechst. Gemeinn. Naturg. Deutschl. 2nd ed. ii. p. 466, "Europe, Dauria, Java, Senegal" (1807).
Motacilla flaveola, Pall. Zoogr. Rosso-As. i. p. 501, "Russia and Siberia" (1811).
Motacilla flavescens, Steph. in Shaw's Gen. Zool. x. p. 559, "E. Timor" (1817).
Budytes, Cuv. (*La Bergeronnette de printemps*, Buff.), Règne Animal, p. 371 (1817).
Motacilla bistrigata, Raffl. Trans. Linn. Soc. xiii. p. 312, "Sumatra" (1822).
Budytes flavus, C. L. Brehm, Vög. Deutschl. p. 344, "Germany" (1831).
Budytes beema, Sykes, Proc. Zool. Soc. 1832, p. 90, "Dukhun."
Motacilla neglecta, Gould, Proc. Zool. Soc. 1832, p. 129.
Motacilla flava, var. *vulgaris*, Sundev. K. Vet. Ak. Handl. 1840, p. 53, "Stockholm."
Budytes gouldi, Macgillivray, Man. Brit. Birds, i. p. 163, "Continent of Europe, England" (1840).
Budytes schisticeps, Hodgs. in Gray's Zool. Misc. p. 83, "India" (1844).
Budytes dubius v. *anthoides*, Hodgs. op. cit. p. 83, "India" (1844).
Budytes pygmæus, A. E. Brehm, J. für Orn. 1854, p. 74, footnote, "N. E. Africa."
Budytes superciliaris, A. E. Brehm, ut suprà, "Chartoum."
Budytes fasciatus, C. L. Brehm, Vogelfang, p. 141, "Galicia, Hungary" (1855).
Budytes paradoxus, C. L. Brehm, op. cit. p. 142 (1855).
Budytes campestris (Pall.), C. L. Brehm, op. cit. p. 142, "Heligoland" (1855).

Yellow, *Grey-headed Yellow*, or *Blue-headed Yellow Wagtail*, English; *Bergeronnette de printemps*, French; *Alvelõa amarilla*, Portuguese; *Pispita amarilla*, Spanish; *Cutrettola gialla*, Italian; *Kappamosk*, Maltese; *gelbe Bachstelze*, German; *gele Kwikstaart*, Dutch; *Gul-Vipstjert*, Danish; *Gulerle*, Norwegian; *Gulärla*, Swedish; *Keltanen Västäräkki*, Finnish; *Jeltaya triasoguska*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 674. fig. 2; Werner, Atlas, *Insectivores*, pl. 82; Kjærb. Orn. Dan.

taf. xix.; Frisch, Vög. Deutschl. taf. 23; Fritsch, Vög. Eur. taf. 17. figs. 17, 18; Naumann, Vög. Deutschl. taf. 88; Sundevall, Sv. Fogl. pl. ix. figs. 4, 5; Gould, B. of Eur. pl. 146; id. B. of G. Brit. iii. pl. 4; Dall & Bannister, Trans. Chic. Ac. Sc. i. pl. xxx. fig. 1.

♂ *ad. ptil. æst.* capite summo et capitis lateribus cum nuchâ cærulescenti-cinereis, striâ supra oculum ductâ et striâ indistinctâ suboculari albis: dorso viridi-olivaceo vix cinereo mixto, uropygio et supracaudalibus magis flavescentibus: remigibus saturatè fuscis, primariis vix flavo, secundariis et tectricibus alarum conspicuè flavido vel ochrascente albido marginatis: rectricibus duabus exterioribus utrinque albis, in pogonio interno ad basin obliquè nigro-fusco marginatis, reliquis nigro-fuscis: mento albo: corpore subtùs pulcherrimè flavo: rostro et pedibus nigris: iride fuscâ.

♀ *ad.* sordidior, corpore suprà pallidiore, capite et nuchâ non cærulescenti-cinereis sed sordidè cinereis vix olivaceo tinctis, gulâ et pectore supremo albis vix flavo lavatis, corpore subtùs imo flavo.

Adult Male (Andalucia, 2nd May). Crown, nape, and sides of the head ashy blue; from the base of the bill a white stripe passes over and behind the eye; and there is an indication of another streak below the eye; back and rump deep greenish grey, becoming green on the rump and upper tail-coverts; quills dark brown, the primaries narrowly edged with yellow, and the secondaries and wing-coverts more broadly margined with yellowish or buffy white; the two outer tail-feathers on each side white, with a narrow black line on the basal portion of the inner web, remaining tail-feathers blackish brown; chin white, gradually merging into rich canary-yellow, which latter colour pervades the entire underparts; bill and legs black; iris brown. Total length about 5½ to 6 inches, culmen 0·62, wing 3·2, tail 2·9, tarsus 1·0, hind toe with claw 0·65, hind claw 0·32.

Adult Female (Piedmont, 20th April). Differs from the male in having the upper parts paler, the crown and nape dull grey with a faint olivaceous tinge, the eye-streak less distinct, it being dull white, the throat and upper breast white, washed with yellow, and the underparts paler yellow than in the male.

Young (Saxony). Upper parts dull greyish brown, with an olivaceous tinge; over each eye a broad yellowish or buffy white streak, above which, on each side of the crown, a blackish brown stripe passes; from the base of the lower mandible a dull white streak passes down the side of the throat, also bordered by black; inner quills and scapulars broadly margined with buffy or yellowish white, primaries narrowly edged with pale yellow, wing-coverts broadly tipped with buffy white; tail as in the adult, but duller; underparts dull white, becoming sulphur-yellow on the lower breast, and rest of the underparts, breast, and sides of the neck marked with blackish brown.

Obs. It would appear from specimens before me, that from the stage of plumage above described the young bird becomes in the winter much greyer, and loses the broad margins to the feathers and the black markings on the throat, head, and breast. A specimen from Lake Baikal has the crown, nape, and back dull greyish, with a faint yellowish tinge, the eye-streak clearly defined, and white, the wings and tail as in the adult, but with very little trace of yellow in the edgings, and the underparts white, slightly washed with grey on the flanks and breast, and faintly tinged with yellow on the lower flanks. Another specimen, also from Lake Baikal, has the eye-streak and underparts tinged with buff, and no trace of yellow in the plumage. Another specimen, shot at Etawah on the 1st of February, shows the change from these into the adult dress; for it resembles the first of these examples closely, except that part of the crown has become rich blue-grey, the eye-streak is whiter; a few of the rich-coloured dorsal feathers of the adult dress have appeared here and there on the back; and part of the lower throat and a patch on the sides of the breast are rich yellow, the rest of the underparts being white.

It appears doubtful if, when fully adult, the bird ever loses the yellow underparts at any season; for male specimens shot in November and December in India differ merely from birds in full breeding-dress in having the entire plumage duller, the underparts rather paler, the blue-grey on the crown somewhat obscured by greenish, and on the breast there are a few dark markings. A male from Stockholm, shot on the 15th of September, and marked by Mr. Meves as being an adult bird, resembles these, but is somewhat duller in colour, has the eye-streak washed with primrose-yellow, and the underparts are paler—which, however, may only be the effect of climate, as the differences are very slight. The extent of white on the throat in different specimens varies greatly; but these variations appear to be individual.

Scarcely any group of birds vary so much as the Wagtails; and it is barely possible to say with any degree of certainty which should be considered distinct species and which mere varieties. After a most careful examination of a very large series of specimens from various localities in Europe and Asia, I find it most difficult to arrive at any definite conclusion; but it appears to me that they naturally separate into four fairly distinct forms, which to a large extent have separate breeding-haunts. These forms, *Motacilla flava*, *Motacilla viridis*, *Motacilla melanocephala*, and *Motacilla raii*, I find it most convenient to treat as distinct species, though at the same time I feel bound to add that although the males in full plumage are almost always distinguishable at a glance, yet one not unfrequently meets with immature examples which it is hard to determine to which species they should be referred. Messrs. Finsch and Hartlaub, in their well-known work on the ornithology of East Africa (Vög. Ost-Afr. pp. 268–274), go most carefully into this question, and end in uniting all the above four species under the name of *Motacilla flava*—a course which, however, I deem it most expedient not to follow.

The present species (*Motacilla flava*), which may be considered the typical form, is during the breeding-season found in Central Europe, whereas in the high north *Motacilla viridis* alone occurs, in the south one meets with *Motacilla melanocephala*, and in the west or north-west *Motacilla raii* is the predominant form; but during the winter and in the seasons of passage one finds all four species in the same localities in many parts of Southern Europe and Asia or in North Africa, as all migrate southward after the breeding-season.

The present species inhabits during the breeding-season the central portions of Europe and Asia, being but rarely met with in the more northern portions of the Continent. It has occasionally been met with in Great Britain, but is only a rare visitant, *Motacilla raii* being the predominant species of Yellow Wagtail in our islands. Professor Newton says (Yarr. Brit. Birds, i. p. 560) that the first recorded occurrence in Great Britain was that of a fine adult male shot at Walton-on-the-Naze, on the 3rd October, 1834, by Mr. Henry Doubleday. Another was recorded by Sir Patrick Walker in January 1836, as having been obtained on the banks of the Water of Leith; and a third was said to have been met with near Edinburgh about the same time. A male was shot on May 1st, 1836, near Newcastle-on-Tyne; and on the 2nd May, 1836, Hoy killed an adult male at Stoke Nayland, in Suffolk. The male figured in Yarrell's 'British Birds' was taken near Finsbury in April 1837. Besides these occurrences there have been many others since Mr. Gould's discovery (in 1832) that our British species and the present Yellow Wagtail are distinct; and Professor Newton says that nearly forty occurrences have on good authority been recorded. They have, he says, "generally occurred on or near the coast of the

south-western, southern, or eastern counties, Cornwall, Devon, Somerset, Sussex, Kent, Essex, Suffolk, and Norfolk, mostly in the months of April, May, or June, and several times in pairs. At Lowestoft, in April 1854, according to Mr. Gurney (Zool. p. 4440), four males and two females were killed in three days out of a flock of the Yellow Wagtail; but on hardly any other occasion has more than a pair been observed together in this country. Mr. J. Watson states (Zool. s. s. pp. 2343, 2406) that two or three pairs were noticed from year to year near Gateshead, where two nests were found in 1869, and a third nest in 1870, when two young birds, one of which was determined by Mr. Hancock, were shot."

Referring to its occurrence on the south coast of England, Mr. J. Gatcombe writes to me as follows:—"This species occasionally visits the neighbourhood of Plymouth in spring and autumn, about the same time as the common species, *M. raii*. I have myself obtained three specimens, two males and a female, and observed others, the last a pair during the autumn of 1874. They were in the same field with a flock of *M. raii*, but did not seem to exactly associate with them, keeping more by themselves, and when disturbed flew off in a different direction, generally returning, however, to the same field in which the others had alighted. This I have remarked on several occasions, but have sometimes known them to fly off by themselves altogether, and even a single bird to separate itself from a flock of the other species. I also fancy that *M. flava* is more partial to the vicinity of water; but of this I am not quite certain. I have also remarked that the white on the throat of this species varies considerably in extent, some having only a small spot on the chin with all below of a brilliant yellow, whilst in others the white extends as far as the breast. One of the males which I killed is the finest I ever saw—pure white extending as low as the upper part of the breast, and the greater portion of *three* of the outside tail-feathers on each side being white, instead of two only, as is usually the case, the tail of the female also being similar. I have never observed this peculiarity in the tail-feathers of but one old male of *Motacilla raii*." Besides the above-recorded instances of its occurrence in Scotland, Mr. Robert Gray refers (B. of W. of Scotl. p. 113) to one which was obtained at West Carns, near Dunbar, in May 1868, and is now in the possession of Mr. Francis M. Balfour, of Whittingham; and Dr. Saxby writes (B. of Shetl. p. 83) that it is a straggler to Shetland, where he has seen it several times late in the autumn. He observed one near the Sandy Loch, not far from Lerwick, about the middle of October 1870; and the others were seen in Unst, upon every occasion near a freshwater loch. He adds that he shot one to make sure that it was really the present species. Thompson did not include it in his work on the ornithology of Ireland; but Professor Newton writes (*l. c.*) that he was "informed of its occurrence in that country by Mr. Blake-Knox, who thinks it is much overlooked in the south." The present species of Wagtail has, Mr. Benzon informs me, been only twice obtained in the Færoes; but it visits the southern lowlands of Scandinavia regularly during the summer season. Mr. R. Collett writes that it occurs but sparingly in the southern portions of Norway, and in the University Museum there is a female, shot near Christiania in May 1857; and Sundevall states (Sv. Fogl. p. 45) that "it is found in the southern part of Sweden, up as high as about 60° N. lat.; it is common near Stockholm and Upsala, but rare in the western provinces, where, early in the present century, it is said to have been common." It occurs in Southern Finland; but I am unable to say how far north it ranges. I have shot specimens of the present species in Wiborgs Län, in Southern Finland; but those

which I found breeding in the vicinity of Uleåborg were certainly *Motacilla viridis*, and not the present species. In Northern Russia the present species is also replaced by *Motacilla viridis*; but *Motacilla flava* is common, and generally distributed during the summer season in Central Russia, the Baltic Provinces, and Poland; and Borggreve says that it is a summer visitant in North Germany, frequenting the marshy plains, but it is commoner in the east, and avoids mountainous districts. Mr. Benzon informs me that it arrives in Denmark late in April or early in May, and leaves late in September or early in October. Its common Danish name is, he says, *Gul Vipstjert*; but it has also many provincial names—such as *Gul-Havrevippe*, *Gul-Havrestjert*, *Smörfugl*, *Gulspink*, *Engfugl*, and *Majfugl*. As above stated it is said not to be so numerous in Western as in Eastern Germany; but Mr. Sachse informs me that it is found at Altenkirchen, in Rhenish Prussia, during passage in May and in September or October, but rarely remains to breed there, though he has occasionally observed a pair or two during the summer season; but on the banks of the Rhine it is not so uncommon. It is said by Baron De Selys-Longchamps to be tolerably numerous in Belgium, where it arrives in April, breeds, and leaves in September. Mr. Labouchere informs me, however, that it is nowhere very abundant in Holland, where it also nests in the swampy meadows. Von Droste says that Van Wickevoort Crommelin found a pair breeding near Haarlem, the male of which was a Ray's Wagtail, which is very rare in Holland, and the female a Grey-headed Wagtail. He adds that *M. flava* breeds commonly in the Island of Borkum, but that he only observed a couple of specimens of *M. viridis* during passage, and he does not refer to *M. raii* as being found there. In France the present species is common from April to November; and Dr. E. Rey found it numerous everywhere in Portugal, but especially so in Algarve. In Spain it is common; and Colonel Irby says (Orn. Str. Gibr. p. 109) that it is "found on both sides of the straits in great abundance; the earliest that I saw it was on the 20th and 24th February (in different years), many appearing on the 25th. From that time to the 20th of April they continued to pass; and on that date I saw great numbers at Gibraltar resting on the 'flats' at Europa after their flight across the sea. They leave in August and September." Colonel Irby speaks of it as *Budytes flavus* vel *cinereocapillus* (i. e. *viridis*); Mr. Saunders, who states (Ibis, 1871, p. 215) that he "obtained several nests with parent birds in the Seville and Malaga markets," adds that it appears to belong to the variety *cinereocapilla* of Savi; but against this I may remark that almost all the specimens from Spain I have examined are referable to the present species, though it is true that *M. viridis* also occurs there, for Mr. Saunders has sent me a Spanish-killed specimen of the latter species.

Passing eastward, again, I find it recorded as being common in Savoy; and I have received numerous specimens from Italy, where it is said to be generally distributed, especially in the Romagna and Piedmont; and Bettoni inserts it in his list of species which breed in Lombardy. In Sicily it is also common, and some few remain there throughout the winter; and in Malta, Mr. C. A. Wright states (Ibis, 1864, p. 62), "it commences arriving in flocks about the middle of March, and is seen again in September." Dr. Krüper says that it occurs only in the spring and autumn passage in Greece, but does not appear to breed there. Dr. Fritsch says (J. f. O. 1857, p. 192) that it occurs in Southern Germany along the Elbe; and some years ago it was common between Kuchelbad and Königssaal, but in the autumn its numbers are increased

by large arrivals from the north. I have seen it on the shores of the Lower Danube, and possess examples from near Constantinople. In Southern Russia it is not so numerous as *Motacilla alba*, and, Dr. Radde says (J. f. O. 1854, p. 58), does not appear to breed there, but passes further north. Dr. Krüper, who met with it in Asia Minor, says that it occurs only on the two seasons of passage, and it also passes through Palestine.

In North-east Africa both this species and *Motacilla viridis* occur during passage and in winter; but Captain Shelley remarks that they keep apart, and that whereas he found *M. viridis* common in Egypt in March, he only met with *M. flava* about the middle of April in Nubia migrating northward. Von Heuglin says that it winters south of Nubia, and he observed it in September and November on the Danakil and Somali coasts. Mr. Blanford obtained a specimen in full breeding-plumage at Lake Ashangi early in April; and Mr. Jesse observed it commonly about Zoulla and Koomaylee in Abyssinia, in March. In North-west Africa it is also common, being most numerous during the seasons of passage, but some also remain to breed. Mr. Salvin writes (Ibis, 1859, p. 310) that he "observed it at Kef Laks, apparently on passage. It afterwards occurred in plenty at Zana and Aïn Djendeli. It appears local in its distribution, but common where it is found." During the winter it ranges far south in Africa. Messrs. Shelley and Buckley say that it is very abundant in West Africa; and Mr. Andersson writes (B. of Damara Land, p. 112) as follows:—"I had been fifteen years in Damara Land before I became aware of the existence of this Wagtail, which I first observed at Objimbinque in 1865, when I obtained a few specimens, nearly all of which were immature. It is a migratory bird, and appears only in or about the rainy season." Wahlberg obtained a male at Port Natal; and Mr. Ayres writes (Ibis, 1871, p. 154) as follows:—"It appears in the Transvaal in our spring in considerable numbers, and leaves again about the latter end of April; they do not appear to nest here, neither are they in good plumage."

The present species occurs as far east as China. It was on one occasion obtained by Mr. Blanford in Persia. In India it is a common winter visitant, retiring further north to breed. I have received numerous specimens from Mr. W. E. Brooks, as well as of *Motacilla viridis*; and Mr. A. O. Hume says (Stray Feathers, ii. p. 238) that the present species is, according to Mr. Davison, abundant both at the Andamans and Nicobars. It occurs in Siberia. Von Middendorff appears to have met with *M. viridis* on the Boganida and in the Stanowoi Mountains; but Von Schrenck, who says that it occurs throughout the Amoor country, states that examples he obtained were referable to the present species. It arrives there in May and leaves in September. Dr. Radde obtained the present species at Tarei-nor, where it breeds. Père David says that it is very common at the two seasons of passage in Mongolia; and Mr. Swinhoe says that it is found in China generally, and that the South-China form is the present one, *M. flava*, whereas in North China *M. viridis* is met with.

The present species has likewise occurred in the western Nearctic Region; for Messrs. Dall and Bannister obtained it in Alaska, and the latter gentleman writes (B. of Alaska, in Trans. Chic. Ac. Sc. p. 277) that he "first observed this species at St. Michael's about the 9th or 10th of June, and from that until well into the month of August they were among the most abundant birds, perhaps after *Plectr. lapponicus* the most abundant of the strictly terrestrial species. During the month of June I observed them generally in flocks of twenty to thirty individuals.

It appeared to me to be a rather shy bird; most of the few specimens obtained were shot on the wing while flying overhead."

In its habits the Blue-headed Wagtail has much in common with our common Pied Wagtail. Like that species it is frequently met with in the vicinity of water, in damp swampy meadows, and in marshy localities, but especially in grassland, whether damp or not, if cattle are grazing about; for it follows these latter and catches the insects which are generally found immediately around them. It runs with the greatest ease and grace, every now and again nodding its head and jerking its tail, and is, as a rule, not a shy bird; and, unless in places where it has been subject to persecution, I have rarely found much trouble in approaching within a tolerably short distance of it. Its flight is lighter and swifter than that of the Pied Wagtail; and though also consisting of a series of bow-shaped lines, yet these are more regular and longer than those in the flight of that species, and altogether the flight of the present species somewhat more resembles that of the Pipits. It is amusing to watch them when in the spring of the year they are pursuing each other, turning on the wing with the greatest ease, their rich colours gleaming in the bright sunshine, and appearing almost brighter than they really are. When on the ground the present species does not hop, but runs, taking rather short steps, the tail being held horizontal, and every now and then gently moved. It frequently, however, perches on a bush or a fence, but does not appear to sit very steadily on a twig, the feet being formed rather for walking than perching. It appears to be a much less hardy species than the Pied Wagtail, and leaves earlier for the south, appearing to shun the least cold. It feeds on insects of various descriptions, such as gnats, small grasshoppers, caterpillars, &c., but more especially winged insects of various sorts, which it both picks off the grass-stems and catches on the wing; and one often sees it at the edge of the water in search of insects, and still more frequently, as before stated, in the vicinity of cattle.

It breeds somewhat late, the full complement of eggs being usually deposited in the latter half of May, or even later; and so far as I can ascertain it appears, as a rule, to rear but one brood in the season. Its nest is placed on the ground, usually under shelter of an overhanging tussock, being carefully concealed, and it is not unfrequently placed in the bank of an old dried-out ditch or amongst tolerably dense herbage. The nest is constructed of fine rootlets, grass, straws, and bents, sometimes intermixed with moss, not strongly but rather loosely built, and lined with horse-hair, wool, or fine bents. I have never found any feathers in nests I have taken; but Naumann says that it not unfrequently lines its nest with wool intermixed with a few downy feathers.

The eggs, from four to five, more seldom six, in number, are somewhat small for the size of the bird, those in my collection averaging about $\frac{31}{40}$ by $\frac{24}{40}$ of an inch, and are dirty white, closely marbled and clouded with clay-brown, yellowish buff, or greyish, the colour being so closely clouded on the surface of the shell as to make it difficult to say what the ground-colour really is.

Mr. A. Benzon, writing to me respecting its habits and nidification in Denmark, writes as follows:—"It is everywhere common on the lowlands, even close to Copenhagen, frequenting the meadows. It builds on the ground, frequently on a bank, carefully hidden in the herbage, and in a sort of depression under shelter of a tussock, or even on the flat earth with but little shelter. The nest is lined with fine roots, fine bents, horse-hair, wool, and, though seldom, a

few feathers. Nests I have measured average about 55–60 millims. in diameter, and 15–20 millims. in depth. It usually deposits its eggs early in June, or from then to the middle of the month. These, from five to six in number, are slightly elongated, and a little pointed at one end, bluish grey in ground-colour, and marked with greyish and greyish brown, the markings being clouded together, so that, according as the brown or yellowish grey markings predominate, the egg has a general tendency towards brown or yellowish grey. Eggs in my collection measure from 17 by 14 to 20 by 15 millims."

The specimens described and figured are in my own collection; the latter are an adult male and a young bird, both being the specimens above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Stockholm, September 15th, 1860 (*Meves*). *b*, ♂. Saxony (*Schlüter*). *c*, ♀. Silesia, May 1867. *d*. France, 1848 (*Parzudaki*). *e*, ♂, *f*, ♀, *g*, ♂, *h*, ♂. Piedmont, April 1870 (*Salvadori*). *i*, ♂. Piedmont, May 1870 (*Salvadori*). *j*, ♀, *k*, ♂. Andalucia, May 1874 (*Irby*). *l*, ♂, *m*, ♂. Malta, April 26th (*Adams*). *n*. Malta (*C. A. Wright*). *o*, *juv*. Crimea (*Whitely*). *p*, ♂, *q*, ♀. Asia Minor, September 1865 (*Robson*). *r*. Egypt (*E. C. Taylor*). *s*. Egypt (*Rogers*). *t*. Tangier (*Olcese*). *u*, *v*. Lake Baikal (*Verreaux*). *w*, ♂. N.W. India, November 29th, 1870 (*W. E. Brooks*). *x*, ♂. Futtegurh, April 17th, 1872 (*W. E. Brooks*). *y*, ♀. Futtegurh, May 19th, 1872 (*W. E. Brooks*). *z*, *aa*. Etawah, November 1869 (*W. E. Brooks*). *ab*, ♂, *ac*. Etawah, December 1869 (*W. E. Brooks*). *ad*, ♂. Etawah, February 1st, 1870 (*W. E. Brooks*). *ae*, ♂, *af*, ♀. Etawah, April 10th, 1871 (*W. E. Brooks*). *ag*, ♂. Etawah, March 22nd, 1872 (*W. E. Brooks*). *ah*, ♂ *jun*. Fifty nautical miles from Luçon, October 15th, 1869 (*Captain Conrad*).

E Mus. Howard Saunders.

a, ♂. Malaga, April 17th. *b*. Granada. *c*, ♂. Valencia, April 15th. *d*, ♀. Valencia, April 7th. *e*, ♂. Valencia, April 4th. *f*. Valencia, March 28th. *g*, *h*, ♂, *i*, ♀. Valencia, April.

E Mus. H. J. Elwes.

a, ♂. Futtegurh, April 1870 (*W. E. Brooks*). *b*, ♂. N.W. India, November 1869. *c*. N.W. India, December 9th, 1870 (*W. E. B.*). *d*. Lachoong, Sikkim, September 12th, 1870 (*H. J. E.*).

E Mus. R. Swinhoe.

a, ♀. Amoy, February 6th, 1857. *b*, *c*, ♂, *d*, ♀. Amoy, April 25th, 1861. *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*. Amoy, May 1867. *m*. Amoy, October 15th, 1866 (*R. S.*). *n*, *o*. E. Timor, 1861 (*A. R. Wallace*).

E Mus. H. B. Tristram.

a, ♂. Algiers, May 2nd, 1856. *b*, ♀. Algiers, June 2nd, 1856. *c*, ♀ *juv*. Algiers, October 9th, 1856 (*H. B. T.*). *d*, *e*, ♂, *f*, ♀. Kef Laks, April 1857 (*H. B. T.*). *g*. Cythera, May 4th, 1858 (*H. B. T.*). *h*, ♂. Jericho, April 14th, 1864 (*H. B. T.*). *i*, *k*, *l*. N.W. India. *m*. Amoy, June 1861 (*R. Swinhoe*). *n*, ♂. E. Timor, 1861 (*A. R. Wallace*).

MOTACILLA VIRIDIS.

(GREY-HEADED WAGTAIL.)

The Green Wagtail, Brown, Illustr. Zool. p. 86, pl. xxxiii. fig. 2, "Ceylon" (1776).
Motacilla viridis, Gmel. Syst. Nat. p. 962, "Ceylon" (1788, ex Brown).
Motacilla cinereocapilla, Savi, Nuovo Giorn. delle Lett. p. 190; Orn. Tosc. iii. p. 216, "Italy" (1831).
Budytes cinereocapilla, Bp. Comp. List, p. 19, "S. Europe" (1838).
Motacilla flava, var. *borealis*, Sundevall, K. Vet. Ak. Handl. 1840, p. 53, "Lapland."
Motacilla flava cinereocapilla, Schlegel, Rev. Crit. p. xxxviii, "Italy" (1844).
Budytes nigricapilla, Bp. Consp. Gen. Av. i. p. 249, "Dalmatia, Ital., Scandinav., Lapl." (1850, partim).
Budytes atricapillus, C. L. Brehm, Vogelfang, p. 141, "Lapland and Dalmatia" (1855).

Bergeronnette à tête cendrée, French; *grauköpfige gelbe Schafstelze*, German; *Cutrettola capo-cenerino*, Italian; *Graahovedet Vipstjert*, Danish.

Figuræ notabiles.

Kjærb. Orn. Dan. taf. xix.; Fritsch, Vög. Eur. taf. 17. fig. 16; Roux, Orn. Prov. pl. 196; Gould, B. of G. B. iii. pl. 5; Sundevall, Sv. Fogl. pl. ix. fig. 6; Naumann, Vög. Deutschl. taf. 373.

♂ *ad.* *Motacillæ flavæ* similis, sed striâ superciliari nullâ, pileo et nuchâ saturatè schistaceis, capitis lateribus nigris.

♀ *ad.* mari similis sed sordidior et pallidior.

Adult Male (Mezen, N. Russia, 17th June). Resembles *M. flava*, but lacks the white streak above the eye, the head being of a darker shade of grey, and the lores, space immediately under the eye, and auriculars being black.

Female. Differs from the male in being duller in colour, and paler both in the coloration of the upper and underparts.

Obs. The present species is the most closely allied to *M. flava*. Examples from the north of Europe, shot during the breeding-season, always have the heads very dark blackish slate-blue, but not black as in *M. melanocephala*; but I have examined many examples from Southern Europe which differ from *M. flava* only in lacking the white stripes over the eyes and the white markings which are sometimes seen on the sides of the head of *M. flava*, the sides of the head being much darker than the crown. The extent of white on the throat varies considerably; for in most of the examples from Italy the entire chin and upper throat are white, whereas in those from Northern Scandinavia and Russia there is only the faintest sign of white on the chin.

2

The present species or form of Yellow Wagtail, differing in always having the head deep slaty blue, with the sides black, and in lacking the white superciliary stripe, appears to be, as a rule, the most boreal of the various Yellow Wagtails during the breeding-season; but at other seasons of the year it is found almost everywhere together with *Motacilla flava*, though in much smaller numbers. I do not find any record of its occurrence in Great Britain; but it is common in Northern Scandinavia, where it is the predominant form during the nesting-season, whereas in the southern lowlands it is replaced by typical *M. flava*, which, however, is less numerous than the present species. In Norway it is found in the northern districts, on the Dovrefjeld, and up northwards into East Finmark, where, according to Pastor Sommerfelt, it breeds numerously. Professor Sundevall states that in Sweden the present species is found on the Ångermanelf in 63° N. lat., and inhabits the entire country north of that up to Finmark, where it is met with at Alten and Hammerfest, but scarcely at the North Cape. In Lapland, he adds, it does not range above the conifer-region. In Finland I met with the present species breeding in tolerable abundance near Uleåborg, where I did not observe any of the southern race (*M. flava*); and all the specimens I have seen from the Archangel Government, in Northern Russia, are referable to the present species. It is rather difficult to define the range of this species in Continental Europe; but it may be said to occur in most parts during passage, but is much less common than the typical form. It has not been known to occur in Germany, except during passage; and Baron De Selys Longchamps speaks of it as being found accidentally during passage in Belgium, and he obtained an adult example near Liége on the 18th May, 1832. Messrs. Degland and Gerbe speak of it as being found in Southern France, and as of accidental occurrence in the northern provinces, and add that it has been found in the Lille market in the spring of the year. It appears to be rare in Western Europe; but Mr. Saunders possesses a specimen from Granada that I have examined, and which is certainly the present species. From Italy I have received several specimens; but Count Salvadori says that it is less common than *M. flava*; it is said, however, to have been found breeding in Piedmont, Tuscany, and in the island of Sicily. Mr. C. A. Wright states (Ibis, 1864, p. 62) that it occurs at Malta during passage, together with *M. flava*, in March and in September; and Lord Lilford writes (Ibis, 1860, p. 229) that great numbers arrive in Corfu about the middle of April, but that he never found its nest, though he observed a few pairs during the whole summer. He does not, however, include *M. flava* in his list, and therefore his remarks may probably refer to that species as well as the present bird; and I find that the various authors on the ornithology of Greece unite the present species with *M. flava*, so that it is difficult to ascertain how far this bird is common there or not. It appears to occur in Southern Germany; for Fritsch says that, according to Palliardi, it has on several occasions been obtained near Franzensbad, in Bohemia. I never observed it in the countries skirting the Danube, nor have I ever seen it amongst the Yellow Wagtails sent by Mr. Robson from Turkey; but it is said by Eversmann (J. f. O. 1853, p. 289) to be not uncommon near Orenburg, in South-eastern Russia, and he remarks that flocks of the present species keep apart and never intermix with the flocks of *Motacilla flava* which are found in the same localities. It doubtless occurs in Asia Minor and Palestine during passage; but, though stated by Canon Tristram to have been found by him at Jericho, I have ascertained on examining the specimens obtained by him, that he did not meet with the present species, but

only typical *M. flava*. It was, however, obtained by Mr. C. W. Wyatt in the peninsula of Sinai, as I have ascertained by an examination of a specimen sent by him to Canon Tristram. In North-east Africa it is, according to Captain Shelley (B. of Egypt, p. 129), "the most abundant form of Yellow Wagtail in Egypt, where it appears to remain throughout the year. It is very Pipit-like in its habits, and is more frequently met with in pairs and flocks in the fields than by the water's edge." Von Heuglin, however, says that, as far as his experience goes, none but *M. melanocephala* ever remain to breed in North-east Africa, but during winter the present species appears to pass as far south at least as Abyssinia. On the west side it is recorded by Loche, who says that he obtained one near Médéah; and it also occurs near Algiers, but it is rare, and he does not know if it ever remains there to breed.

To the eastward the present species occurs as far as China. It is a tolerably common winter visitant to India, but does not appear to be so common as *M. flava* and *M. melanocephala*. It probably ranges as far south as the former of these species; but I find it somewhat difficult to trace its precise range. Severtzoff speaks of it as being somewhat rare in Turkestan, where, he adds, it occurs during passage, not remaining to breed. It occurs in Siberia, and examples obtained by Middendorff on the Boganida appear to be the present species. According to Dr. G. Radde it is found in the Stanowoi Mountains and on the Upper Ussuri; but the Yellow Wagtail described by Von Schrenck as occurring in the Amoor country appears to be true *M. flava*, and not the present species, which, however, was obtained in China by Mr. Swinhoe, whose specimens, however, are all from Amoy and Canton.

In its habits the present species does not differ from *Motacilla flava*; and its nest and eggs are also similar. I have taken the latter near Uleåborg, in Finland, and find on comparing the eggs with those of *M. flava* that they are a trifle darker, though not differing from them in size or shape. The nest was placed under shelter of a tussock, on the ground, and was a rather loosely made structure, composed of dried grass bents and a few rootlets, slightly lined with finer bents and a few horsehairs.

The specimen figured, on the same Plate with *Motacilla flava*, is an adult male from Mezen, in North Russia, in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Christiania, Norway, May 1870. *b*, ♂. Mezen, N. Russia, June 17th, 1873 (*Piottuch*). *c*. Archangel, June 8th, 1872 (*J. A. Harvie-Brown*). *d*, *e*, *f*, *g*, ♂. Piedmont, April 1870 (*Count Salvadori*). *h*, *i*, *k*, *l*. Piedmont, May 1870 (*Count Salvadori*). *m*. Algeria (*Verreaux*). *n*. Egypt (*Rogers*). *o*. Etawah, N.W. India, September 22nd, 1869 (*W. E. Brooks*). *p*, ♂. Etawah, February 1st, 1870 (*W. E. B.*).

E Mus. Howard Saunders.

a. Granada, Spain, September 1871.

E Mus. H. J. Elwes.

a, ♂. Etawah, December 19th, 1870. *b*. Etawah, November 21st, 1870 (*W. E. Brooks*). *c*. Tientsin, China, (*Whitely*).

4

E Mus. H. B. Tristram.

a, ♂. Wady Ginna, Arabia (*J. K. Lord*). *b*. Umballah, October (*R. C. Beavan*). *c*, *d*. Etawah, April (*W. E. Brooks*). *e*. Canton (*Blakiston*).

E Mus. R. Swinhoe.

a, ♂, *b*. Amoy, May 1867 (*R. S.*). *c*, *d*, *e*, ♂, *f*, *juv*. Canton, October 1871 (*Ford*).



BLACKHEADED WAGTAIL.

MOTACILLA MELANOCEPHALA

293

MOTACILLA MELANOCEPHALA.

(BLACK-HEADED WAGTAIL.)

Motacilla melanocephala, Licht. Verz. Doubl. p. 36, "Nubia" (1823).
Motacilla feldegg, Michahell. Isis, 1830, p. 814, "Southern Dalmatia."
Motacilla feldeggii (Mich.), Bruch, Isis, 1832, p. 1106, "Dalmatia."
Budytes melanocephala, Bp. Comp. List, p. 19, "S. E. Europe" (1838).
Motacilla kaleniczenkii, Krynicki, in litt. ined. fide Kaleniczenko, Bull. Soc. Mosc. xii. p. 229, tab. xx. "Taurus" (1839).
Motacilla flava, var. *africana*, Sund. K. Vet. Ak. Handl. 1840, p. 54, "Senaar, Nubia."
Motacilla flava, var. *dalmatica*, Sund. ut suprà, "Dalmatia."
Motacilla flava melanocephala, Schlegel, Rev. Crit. p. xxxviii. "Dalmatia, Buchara, Arabia, Egypt, Abyssinia" (1844).
Budytes nigricapilla, Bp. Consp. Gen. Av. i. p. 249, "Dalmatia, Ital., Scand., Lapl." (1850, partim).
Motacilla nigricapilla, Von Müll. J. für Orn. 1855, p. 386, "N. Afr."
Motacilla lindermayeri, Brehm, fide Linderm. Vög. Griechenl. p. 82, "Greece" (1860).

Figuræ notabiles.

Demidoff, Faune Pont. pl. ii.; Kalenicz. Bull. Soc. Mosc. 1839, tab. xx.; Eversmann, *op. cit.* 1850, pl. viii. fig. 3; Bp. Faun. Ital. pl. 31. fig. 3; Fritsch, Vög. Eur. taf. 17. fig. 15; Naumann, Vög. Deutschl. taf. 374.

♂ *ad. ptil. æst.* *Motacillæ flavæ* similis, sed capite summo, nuchâ et capitis lateribus saturatè nigris, dorso saturatè olivascenti-viridi: mento, gulâ et corpore subtùs pulchrè flavis: alis et caudâ ut in *Motacillâ flavâ* picturatis: rostro et pedibus nigris: iride fuscâ.

♀ *ad.* corpore suprà cinerascente olivaceo viridi lavato, pileo nigro notato: corpore subtùs pallidè flavo, gulâ et mento fere albis, pectore vix nigro-fusco guttato: alis et caudâ ut in mare picturatis.

Adult Male in summer plumage (Bulgaria). In general coloration of plumage it resembles *M. flava*; but the entire crown, sides of the head, and hind neck are deep glossy black; the back is of a deeper tinge of green, and the underparts are brighter yellow, the chin and upper throat also being yellow and not white; beak and legs black; iris dark brown. Total length about 6 inches, culmen 0·55, wing 3·2, tail 2·9, tarsus 1·0, hind toe with claw 0·68, hind claw 0·32.

Adult Female (Etawah, India, 21st March). Upper parts dull greyish olive with a green tinge; crown strongly marked with black; underparts primrose-yellow; the throat and chin being nearly white; on the breast are one or two dark markings.

Obs. The changes of plumage undergone by the present species are very similar to those of *M. flava*; and I therefore refrain from giving more detailed descriptions. The young birds of both species resemble

each other very closely, and are exceedingly difficult to separate, especially as, so far as I can judge, there is no constant difference in size. As a rule, the young of the present species have the crown darker, and always lack the light streak over the eye. Mr. Brooks sends me specimens of females in what he says is full breeding-dress, as above described and figured; but it appears to me that the old female frequently approaches very close to the male in plumage; for I possess one female from Malta which differs from the male only in having the upper parts a trifle duller, the black on the crown and nape less extended and intermixed with green, and the underparts are nearly, if not quite, as yellow as in the male. A male shot in December, and therefore in full winter dress, has the underparts pale yellow, the lower throat marked with blackish spots, the back lighter and duller than in the summer dress, and the crown greyish, tinged with green, and strongly blotched with deep black. The most peculiar variety of the present species I have ever seen is a male sent to me by Mr. Brooks. The black on the head and nape is extended far down on the latter; the back is dark olive with an orange-green tinge, indistinctly marked with blackish; and the underparts are deep rich orange instead of yellow. In measurements it agrees with ordinary specimens of *M. melanocephala*. It was obtained by Captain Marshall, to whom it belongs, at Umritzur, in India, on the 31st March, 1872. The present species is said sometimes to have an indication of a yellow superciliary stripe; but I have never been fortunate enough to obtain a specimen thus marked.

The present species is essentially a southern bird, being found only (except as a rare straggler) in Southern Europe and Asia, and in Northern Africa. It has not been met with in Great Britain or in Scandinavia; and although very dark varieties of *Motacilla viridis* somewhat closely resemble it, yet these may always, so far as my experience goes, be distinguished by the top of the head being slaty black and not pure black, a broad streak on each side of the head only being black, and the underparts are not so bright yellow. In Germany it does not appear to have been met with, or at least recorded from the mainland; but Mr. Gätke has, Mr. Cordeaux says (Ibis, 1875, p. 181), obtained it several times at Heligoland. Baron De Selys-Longchamps records it from Belgium as of very rare occurrence, and says that a large flock was observed towards the end of the summer near Louvain; and Messrs. Degland and Gerbe say that it rarely occurs in the north of France during summer: but I think it possible that these notes may refer to the Northern Scandinavian form, *M. viridis*. Dr. E. Rey writes (J. f. O. 1872, p. 151) that he found it tolerably common in Portugal in company with *M. flava*; but I think it very possible that the bird he refers to may be the northern form of *M. viridis*, for the present species appears to be more of an eastern than a western form. I do not find it recorded from Spain; and in Italy it appears to be only known from Liguria, but is more numerous, though still rare, in Sicily; and as it has been observed in May, it may very possibly breed there.

Mr. C. A. Wright, who records it from Malta, writes (Ibis, 1864, p. 62) that it is the rarest of the Yellow Wagtails which occur there, and is met with in flocks of *M. flava* and *M. viridis*. "The Maltese bird-catchers," he adds, "call it *Obrosk*, from a real or fancied grating peculiarity in its note, both in spring and autumn, which they consider different from that of *M. flava* or *M. cinereo-capilla*." Lord Lilford, who met with it in Albania, writes (Ibis, 1860, p. 229) that it "arrives together with *M. viridis* at Corfu, but in much smaller numbers, and only remains for a few days. The locality in which I have most frequently observed this bird was the marsh at the mouth of the Kataito river, near Butrinto, in Epirus. They appear to be more arboreal in their

habits than the other Wagtails, and have a very distinct and peculiar note. The Corfu bird-stuffer told me, on my showing him one of this species, that he had never before observed it, and insisted that it was only a variety of *M. viridis*; but there are slight differences of habits, flight, &c. which at once distinguish it from that bird, were the plumage not at once sufficient to settle the question. To myself this species appears to resemble *Motacilla raii* (which I have never observed in these parts) in all particulars more than any other of its congeners." In Greece it appears to be common, and remains there throughout the summer, inhabiting the marshes and lagoons on the sea-shore, being, Dr. Krüper states, most common on the islands frequented by Gulls in Acarnania. It arrives, he says, about the end of March, and in 1873 several were killed in Attica on the 24th March; and a specimen in the Museum at Athens was killed on the 18th March, 1868. In 1874 it arrived on the 1st April. The breeding-season commences late in April or in May; and in 1859 eggs were found in Acarnania on the 29th April. It leaves in the autumn late in August or in September; but Dr. Krüper adds that he has not yet detailed information respecting the exact date of its departure. It appears to be tolerably common in Turkey; and Mr. Robson has sent me several specimens of the bird, as well as the nest and eggs, from near Constantinople. It occurs in Southern Russia; but it is somewhat difficult to trace its range there, as the various writers on the ornithology of that country have not sufficiently well distinguished between it and *M. flava*. Ménétries says that it frequents the pastures on the banks of the Kour, near Saliane, in the Caucasus, and is met with in tolerably large flocks; Dr. Krüper records it as numerous on the islands off Smyrna during the summer season; and Canon Tristram, who does not consider it distinct from *M. flava*, met with it in Palestine. In North-east Africa it is tolerably common; Captain Shelley states (B. of Egypt, p. 130) that in Nubia he frequently met with it in April in flocks among the herbage by the river-side, and writes as follows:—"Although I shot many specimens out of these flocks, I never came across a grey-headed bird among them. They were evidently migrating northward at that season. In the Fayoom, in March, I shot the only pair of these birds which I saw there." It would appear that the present species is the only Yellow Wagtail which remains to breed in North-east Africa; for Von Heuglin met with it late in the spring in Egypt, and believes that it remains there for the summer, and Mr. Blanford, who obtained it in Abyssinia, writes (Geol. & Zool. Abyss. p. 381) as follows:—"Common everywhere during the winter; and I suspect many remain and breed on the highlands of Abyssinia; for birds of this species were still abundant about Lake Ashangi at the beginning of May, although they had then assumed the nuptial plumage more than a month." In North-west Africa it is also stated to occur; for Loche says that a specimen was obtained near Aïn Oussera, but that it is a very rare straggler in Algeria.

To the eastward it occurs as far as India; but, judging from the specimens collected by Mr. Swinhoe, it is not met with in China, nor does it appear to visit Siberia. It is recorded from Armenia by De Filippi; Mr. Blanford met with it in Persia and Baluchistan; and it appears to be tolerably widely distributed in India; but, owing to its having been so generally confused with *M. flava* and *M. viridis*, it is somewhat difficult to define its precise range. It certainly occurs in Turkestan, and breeds there commonly in almost all parts of the country.

In its habits the Black-headed Wagtail does not differ much from its allies *M. flava* and

M. viridis. Like those it is usually found in low grasslands, and frequents places where cattle are grazing. Lindermayer states (Vög. Griechenl. p. 81) that it prefers the vicinity of the sea, especially places where the salt water mixes with fresh water, and where the tamarisk, flags, and salsola flourish. It hunts after insects amongst the reeds, and is, if any thing, more restless than the other allied species. It is not unfrequently seen on the branch of a tamarisk, possibly in search of insects, and appears to be fond of the neighbourhood of cattle, but is never seen amongst sheep. He describes a nest he found as being "carelessly placed against the main stem of a tamarisk, and composed of dry flags, lined with hair, flat, and not unlike the nest of *Calandrella brachydactyla*." I have received the nest and eggs from Mr. Robson, of Constantinople, who, when sending them, wrote as follows:—"I send six eggs and the nest of the Black-headed Yellow Wagtail, taken at Khathane on the 17th May, 1863, this being the only nest I could find; but when I visited the same place a week later I found several, in which the young were already hatched. A colony breed on an island here annually, preferring one particular locality, though to all appearance there are many other places equally good, or better, for the purpose of nidification." I still possess four of these eggs, the others having been broken in transit. They are about equal in size to those of *Motacilla flava*, but are rather darker and browner in colour; and three have a blackish line drawn at the larger end, as if with a pen. One, a dwarf egg, measures only $\frac{18}{40}$ by $\frac{16}{40}$ inch.

The specimens figured are an adult male from Bulgaria and a female from N.W. India, both being in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Malta, March 19th, 1867 (*C. E. Wright*). *b*, ♂. Bulgaria (*Buckley*). *c*. Egypt (*Rogers*). *d*, ♂, *e*, ♂. Etawah, December 15th, 1868 (*Brooks*). *f*. Etawah, February 26th, 1870 (*Brooks*). *g*, ♂. Etawah, March 11th, 1870 (*Brooks*). *h*, ♀, *i*, ♀, *j*, ♀, *k*, ♀. Etawah, March 1872 (*Brooks*). *l*, ♂. Bundelkund, December 23rd (*G. F. Marshall*). *m*, ♂. Almora, May 10th, 1865 (*Severtzoff*).

E Mus. H. B. Tristram.

a, ♂. Kokand. *b*. Etawah, N.W. India, April 3rd, 1869 (*W. E. Brooks*). *c*, ♂. Cashmere, March 21st, 1871 (*W. E. B.*).

E Mus. Howard Saunders.

a, ♂. Constantinople, April 23rd, 1866 (*Robson*). *b*, ♂. Missolonghi, May 29th, 1873 (*H. Seebohm*). *c*, *d*, ♂. Futtegurh, March 15th (*A. Anderson*).

E Mus. G. F. L. Marshall.

a, ♂, *var.* Umritzur, March 30th, 1872 (*G. F. L. M.*).



YELLOW WAGTAIL.

MOTACILLA RAII.

294

MOTACILLA RAII.

(YELLOW WAGTAIL.)

The Yellow Water Wagtail, Edw. Gleanings, v. p. 102, pl. 258, "England" (1758).
Motacilla flava, Donovan, Nat. Hist. Brit. B. i. pl. xv. "England" (1799, nec Linn.).
? *Budytes flavissima*, Blyth, Mag. Nat. Hist. vii. p. 342, "England" (1834).
Motacilla flaveola, Temm. Man. d'Orn. iii. p. 183, "England" (1835, nec Pall.).
Budytes flava, Eyton, Cat. Brit. Birds, p. 15, "Great Britain" (1836, nec Linn.).
Budytes rayi, Bp. Comp. List, p. 18, "British Islands" (1838).
Budytes campestris, Keys. & Blas. Wirbelth. Eur. p. xlix. "S. Russia, Persia, G. Britain" (1840, nec Pall.).
Motacilla flava, var. *anglica*, Sundev. K. Vet. Ak. Handl. 1840, p. 53, "British Islands."
Motacilla flava rayi, Schlegel, Rev. Crit. p. xxxviii, "England" (1844).
Motacilla anglorum, Florent Prévost, fide Degland, Orn. Eur. i. p. 442, "Maine et Loire" (1849).
Budytes neglectus, C. L. Brehm, Vogelfang, p. 142, "England, rare in Germany" (1855, nec Gould).
Motacilla campestris, Blas. in Naum. Vög. Deutschl. xiii. p. 130, "S. Ural" (1860, nec Pall.).
Budytes rayi, var. *flavifrons*, Severtzoff, Turk. Jevotnie, p. 67, "Turkestan" (1873).

Figuræ notabiles.

Edwards, *l. c.*; Donovan, *l. c.*; Gould, B. of Eur. pl. 145; id. B. of G. B. iii. pl. iii.; Naumann, Vög. Deutschl. taf. 372.

♂ *ad. ptil. æst.* suprà viridi-olivaceus, pileo magis flavido et uropygio clariore: lineâ superciliari a basi rostri fere ad nucham, lineâ infra oculum, et corpore subtùs flavissimis: alis et caudâ ut in *Motacillâ flavâ* picturatis.

♀ *ad.* mari similis sed sordidior, corpore subtùs pallidè flavo, gulâ et superciliis albidis flavo lavatis.

Adult Male (Pagham, 23rd April). Upper parts olive-green, becoming yellowish green on the crown and forehead; rump rather richer in colour than the back; quills dark greyish brown, the primaries narrowly and the secondaries broadly margined with buffy white, tinged with sulphur-yellow; larger wing-coverts broadly tipped with sulphur-yellow; tail blackish brown, the two outer rectrices on each side white, margined on the basal portion of the inner web with blackish brown; entire underparts rich yellow; a broad stripe of yellow passes from the base of the bill over the eye nearly to the nape; and another streak of the same colour passes under the eye, there being an olive-green line between this latter and the bright yellow throat; bill and feet blackish; iris dark brown. Total length about 6·5 inches, culmen 0·6, wing 3·25, tail 3·0, tarsus 1·0, hind toe with claw 0·68, hind toe 0·38.

Adult Female (Pagham). Resembles the male, but is much duller in colour, the throat and superciliary stripes are yellowish white, and the underparts are much paler yellow.

Young in first autumn (Pagham, July). Upper parts brownish olive, tinged with green on the rump; underparts buffy white, tinged with sulphur-yellow on the lower abdomen; the lower throat and breast washed with brownish buff, forming a sort of dark band; superciliary stripe buffy white; wings and tail as in the adult, but with rather broader and whiter margins, tinged with buff, but not with yellow.

Obs. In autumn dress the adult birds much resemble the young above described, but lack the buffy brown on the lower throat and breast. But sometimes the old males appear to retain their summer dress very late; for one killed on the 16th September differs only from old males in full spring plumage in having the underparts rather paler. I have figured an old male with the yellow head from Southern Russia, in which plumage it is called *M. campestris* by the continental dealers; but I may add that I have an old male from Hampstead, near London, in the same plumage, except that, if any thing, the Russian specimen is a trifle cleaner and brighter in colour, though there is scarcely any difference between them. In this plumage the sides of the head and forehead, as far as the centre of the crown, are like the underparts, rich canary-yellow, and only towards the hind crown and nape does this colour gradually merge into green on the hind neck and back. Donovan (*l. c.*) figures a British-killed bird which is much more richly coloured than any South-Russian example I have ever seen, the entire head and upper neck being rich canary-yellow. My second specimen, from Southern Russia, has the head coloured as in ordinary adult British birds.

Though tolerably widely distributed in Europe, and found also in Africa and in Western Asia, the present species appears to be common only in Western Europe, being elsewhere only a rare straggler. In the British Isles it is the only common species of Yellow Wagtail, excepting *Motacilla sulphurea*, being a regular summer visitant to our isles, arriving late in March or early in April, and leaving again in September, being during the summer season very generally distributed throughout England and Wales, excepting, Professor Newton says, Cornwall and Devon. Mr. Cecil Smith informs me that he never saw it in the Channel Islands, nor is it mentioned in Professor Ansted's list; but he was told that it occasionally visited Guernsey during the spring and autumn passage, and he possesses the skin of one killed there in September 1873. In Somersetshire, he adds, it is a common summer visitant, and remains to breed in most parts of the county. In Scotland it is, as in England, a common bird during the summer season; and Mr. Robert Gray says (B. of W. of Scotl. p. 114) that "in some parts of Lanarkshire and Ayrshire the Oatear or Seed-Lady, as this species is called, is very common on its arrival in the month of April. It appears to keep in flocks for a few days before becoming dispersed, and may be then obtained in some numbers by collectors. Towards the end of April they betake themselves to their old haunts, occupying a tolerably wide tract in the west of Scotland, where they are generally established in pairs at suitable intervals. On the east of Scotland the Yellow Wagtail is distributed in like numbers as far as Forfarshire; and it has occurred several times in Orkney." It is also included by the late Dr. Saxby in his 'Birds of Shetland,' as it occurs in Unst, being, however, he adds, a rare straggler.

In Ireland it is a rare species, and, so far as can be ascertained, appears to occur merely as a straggler, not remaining to breed. Thompson writes (B. of Ireland, i. p. 222) as follows:—"The observations of ornithologists in various parts of the country show that it is generally a rare species. To myself it has occurred but once in a wild state, except about Toome, on the 24th of June, 1832. In that instance one was seen in a turf bog on the confines of the county

of Donegal, a few miles from the city of Londonderry. It has but once been met with by William Sinclair, Esq., on the 28th of April, 1833, when a single individual appeared, and on that day only, in an oat-field at the Falls. One shot at Finglass, near Dublin, about the 20th of April, 1835, has come under my notice in the collection of T. W. Warren, Esq. A second specimen, which I have seen at Dublin, was stated to have been shot in the vicinity of the Custom-house there in 1837. The species is unknown to my correspondents as visiting the southern counties. On the 8th of April, 1841, an old male bird, shot near Belfast, came into my possession. A good ornithologist is certain that two Wagtails seen at the shore of the bay near that town on the 8th of August, 1846, were of this species. About the 1st of May, 1847, three were procured between Portadown and Verner's Bridge, in the county of Armagh, by the Rev. G. Robinson."

After leaving England the range of the present species becomes very difficult to define. It has not been recorded from Scandinavia or any part of North-eastern Europe, but has been met with in Heligoland, though not included by Borggreve in his list of birds found in North Germany. Baron von Droste Hülshoff observed one on the island of Borkum on the 7th May, 1867; and Mr. van Wickevoort Crommelin informs me that it is occasionally seen on the coast of Holland during the spring migration; and it occurs during the two seasons of passage in the neighbourhood of Lille, Amiens, and Dunkirk, but has not yet been observed in Central Belgium. In France, according to Messrs. Degland and Gerbe, it breeds numerously near Dieppe, where *M. flava* occurs only on passage; and they add that it nests also, though rarely, near Lille, where, on the other hand, *M. flava* is common. Crespon met with it near Nîmes; and Messrs. Jaubert and Barthélemy-Lapommeraye record it from Provence as occurring only in the autumn; but Baron J. W. von Müller states (J. f. O. 1856, p. 222) that it is not uncommon in April in the marshes of the Camargue, and that in October it is met with sparingly on passage. It is said to occur in Portugal, where, however, it is rare, and is also met with in Spain. Dr. A. E. Brehm states (Allg. deutsch. naturh. Zeit. iii. p. 458) that he first saw specimens exposed for sale in the Barcelona market late in April, and in May the following year he shot seven specimens near Madrid. Mr. Howard Saunders possesses examples of this species from Malaga and Valencia; but Colonel Irby says he never met with it on either side of the Straits of Gibraltar. In Italy it is extremely rare; for Count Salvadori states that he only knows of one instance of its occurrence, a specimen having been obtained in Liguria by Calvi in April 1821. Mr. C. A. Wright also records (Ibis, 1870, p. 491) the occurrence of a specimen at Malta in the spring of 1868. I find no notice of its occurrence in Southern Germany, Greece, or Turkey; but it is certainly met with in Southern Russia, as specimens are from time to time sent from the Southern Volga under the name of *Motacilla campestris*, a name which certainly does not belong to the present species, though it is applied to it by many continental authors. I possess two specimens from Southern Russia which, though one has the yellow on the head rather fully developed, are certainly specifically identical with our British bird. It is not, however, recorded from Asia Minor or Palestine, nor has it been met with in North-east Africa; but it occurs in North-west Africa, being, according to Loche, an accidental visitant in Algeria; and I possess a specimen collected at Tangier by Olcese, where it must be of rare occurrence, as

Colonel Irby does not include it in his work on the ornithology of the Straits of Gibraltar. It has been recorded from the Gambia and Gold Coast; Dr. G. Hartlaub says (J. f. O. 1854, p. 20) that there are examples from the Gambia in the Bremen Museum, and from the Gold Coast in the Hamburg Museum; and Messrs. Finsch and Hartlaub refer to a fully adult male, in summer plumage, from the Gaboon, examined by them. Mr. Gurney also states (Ibis, 1873, p. 282) that a male in full plumage was sent from the Transvaal by Mr. F. Ayres.

How far eastward the present species is found is hard to say; but it certainly occurs in Turkestan, of which, according to Severtzoff (*l. c.*), it inhabits the entire western portion, being met with to an altitude of about 4500 feet above the sea-level, but is a rare bird.

It is said to have occurred as far east as China; but the species found there has been discriminated and described as distinct by Mr. Swinhoe under the name of *Budytes taivanus*; and after having carefully examined his specimens and compared them with my series of the present species, I fully concur with him in considering the Chinese bird to be a fairly separable and distinct species.

In its habits the present species closely resembles the other Yellow Wagtails, and, like those, is not unfrequently seen perching on a twig or branch, as well as on the ground. It frequents grassy downs, pastures where cattle are grazing, fallow land, and fields of sprouting corn, and does not affect the vicinity of inhabited places, like the Pied Wagtail. Soon after its arrival with us it commences nidification; and so soon as the young are able to fly they accompany their parents in search of food. In the autumn, previous to their departure, they collect in small flocks, and may then usually be seen following the cattle in search of insects which are disturbed as the cattle move about, or which collect round when they are reclining. Like the other Wagtails the present species feeds entirely on insects of various kinds, chiefly small flies, which it will often catch on the wing with great dexterity. It runs with great ease, vibrating its body, and every now and then spreads its tail slightly or moves it gently. Its flight is a succession of long undulations; and on alighting it slightly spreads the tail so as to show the white on the lateral rectrices. The call of the present species consists of two notes uttered in succession, the second being a whole tone lower than the first; and the song of the male bird is short, and not often uttered.

Its nest, like that of *Motacilla flava*, is placed on the ground, sometimes under shelter of a clod or tussock, and always tolerably well concealed amongst the herbage. Nests I have taken were constructed of dried grass bents and small rootlets, lined with finer rootlets, bents, and hair; and in one or two instances some sheep's wool was used in the lining. Professor Newton states that two nests found by Mr. Hewitson on the same day, and within a few yards of each other, were composed, one of green moss and grass, lined with rabbit's down, and the other entirely of grass, lined with fine roots. The eggs, from four to six in number, closely resemble those of *Motacilla flava*; and on comparing my series of eggs of these two species I can detect no constant difference either in colour or size.

The specimens figured are an adult male in full spring plumage, an autumn-plumaged British-killed bird, and one of the yellow-headed old birds from Southern Russia, these being the specimens described, all of which are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Cambridge, May 1861 (*H. E. Fox*). *b*, ♂. Pagham, Sussex, April 23rd, 1870 (*R. B. Sharpe*). *c*, *d*, *e*, *f*, *g*, *h*, *i*, *k*. Hampstead, May 1870 (*Davy*). *l*, *m*, *n*, *o*. Hampstead, June 1870 (*Davy*). *p*. Pagham, July 1870 (*R. B. S.*). *q*, ♂. Hampstead, September 16th, 1871 (*Davy*). *r*, ♀. Highgate, July 7th, 1869 (*Davy*). *s*, *t*, *u*, ♂, *v*, ♀. Highgate, August 1869 (*Davy*). *w*, ♂. Tangier (*Olcese*). *x*, *y*. Southern Russia, May (*Schlüter*).

E Mus. Howard Saunders.

a, ♂ *ad.* Malaga, April 17th, 1871. *b*, ♂. Valencia, April 10th, 1872. *c*, ♂. Valencia, April 6th, 1872. *d*, ♂. Valencia, April 28th, 1873.

Alauda apud Linnæus, Syst. Nat. i. p. 287 (1766).
Sylvia apud Latham, Ind. Orn. ii. p. 531 (1790).
Anthus, Bechstein, Gemeinn. Naturg. Vög. Deutschl. i. p. 247 (1805).
Motacilla apud Pallas, Zoogr. Rosso-As. i. p. 512 (1811).
Spipola apud Leach, Syst. Cat. B. & M. Brit. Mus. p. 21 (1816).
Vitiflora apud Stephens in Shaw's Gen. Zool. x. p. 570 (1817).
Corydalla, Vigors, Zool. Journ. ii. p. 397 (1825).
Leimoniptera apud Kaup, Natürl. Syst. p. 39 (1829).
Pipastes apud Kaup, op. cit. p. 33 (1829).
Fringilla apud Tickell, J. As. Soc. Beng. ii. p. 578 (1833).
Agrodroma apud Swainson, Classif. of B. ii. p. 241 (1837).
Cichlops apud Hodgson in Gray's Zool. Misc. p. 83 (1844).

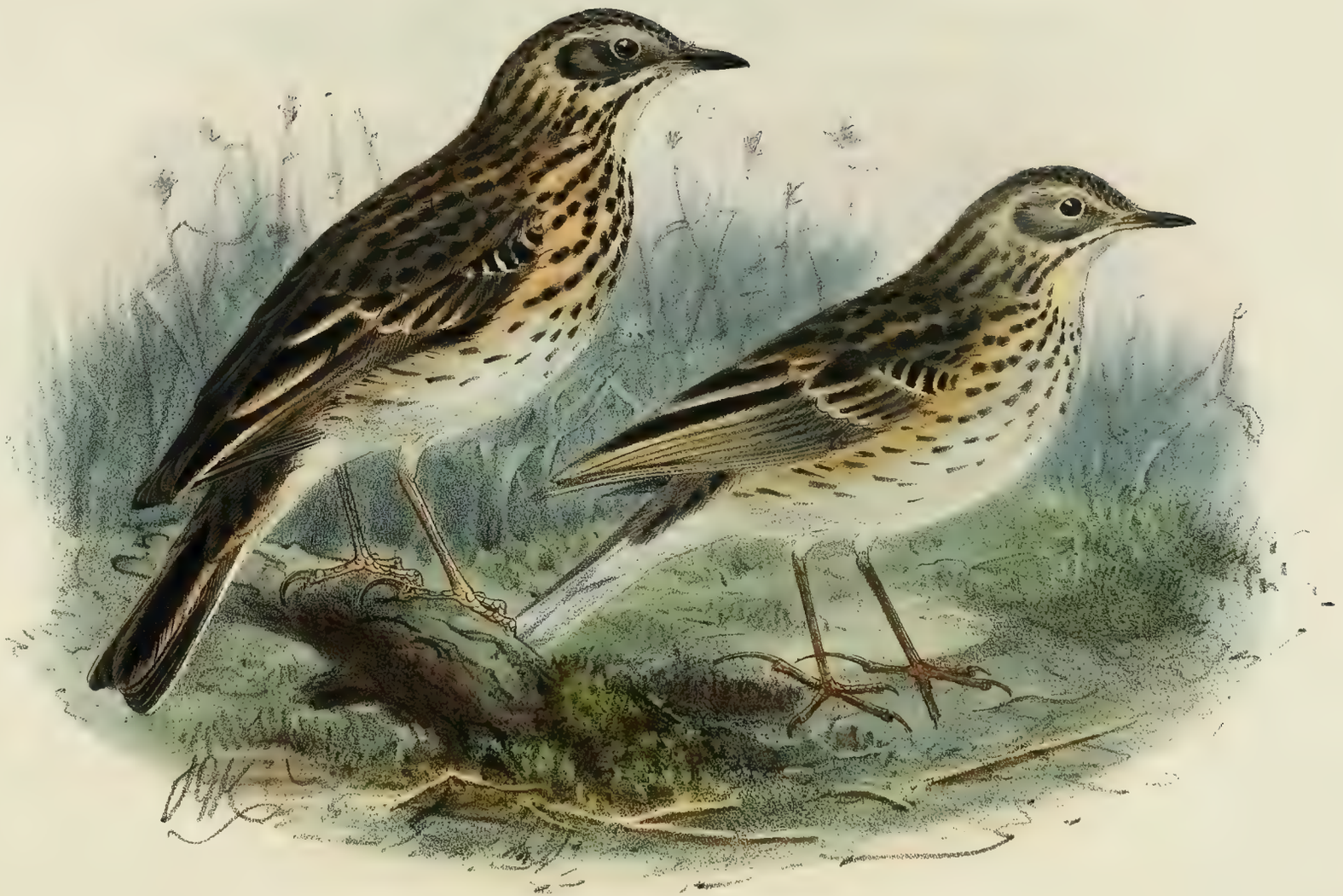
Earlier authors united the Pipits with the Larks; and even Macgillivray took this view; but there can be no doubt that they agree structurally very closely with the Wagtails, and differ very materially from the Larks in having two instead of one moult in the year; besides, the Larks have the back of the tarsus scutellated, and the nostrils (with some few exceptions) covered with short feathers, whereas the Pipits have the back of the tarsus entire, and the nostrils bare.

The Pipits inhabit the Palæarctic, Ethiopian, Oriental, Australian, Nearctic, and Neotropical Regions, having therefore a very extensive range. They vary considerably in their habits, some being inhabitants of the woods and groves, whereas others frequent the open country, both cultivated and wild; and the Rock-Pipit evinces a partiality for the sea-coast. The Pipits are, as a rule, tolerably good songsters, some, however, having a much poorer song than others. They feed on insects, seeds, &c., usually procuring their food on the ground. They all nest on the ground, and deposit four or five eggs, which vary considerably, those of some species being greyish white closely dotted or mottled with brownish olivaceous, whereas those of other species are pale brown or brownish pink, blurred with dark brown or purplish brown. Their flight is rapid and undulating; and some species will, when singing, rise into the air and descend in a semicircle with expanded tail onto the ground or onto a branch again.

Ten species inhabit the Western Palæarctic Region, nine of which breed there, the tenth (*Anthus ludovicianus*) being merely a straggler from the Nearctic Region.

Anthus pratensis, which I take to be the type of the genus, has the bill straight, rather slender, the upper mandible slightly notched; gape with no discernible bristles; nostrils oblong, placed in the lower fore part of the nasal depression, which is slightly feathered behind; wings rather long, the four outer quills nearly equal and longest, the inner secondaries long, one being nearly as long as the primaries; tail rather long, straight, emarginate; tarsus rather longer than the middle toe with claw, covered with four large plates and three inferior scutellæ in front; toes rather long, the hind claw rather long. In some species belonging to this genus the toes are much smaller, and the hind claw is small and arched.

The present genus has been considerably split up by many authors—viz. *Agrodroma*, Swains. (type *Anthus campestris*), *Corydalla*, Vig. (type *Anthus richardi*), *Pipastes*, Kaup (type *Anthus trivialis*), and *Leimoniptera*, Kaup (type *Anthus pratensis*); but I cannot, after a careful examination of the various types of these genera, find that there is any valid reason to thus subdivide it, and have consequently retained all in the genus *Anthus*.



TREE PIPIT.
ANTHUS TRIVIALIS

MEADOW PIPIT.
ANTHUS PRATENSIS

ANTHUS PRATENSIS.

(MEADOW-PIPIT.)

Alauda pratensis, Briss. Orn. iii. p. 343. no. 3 (1760).
Alauda pratensis, Linn. Syst. Nat. i. p. 287. no. 2 (1766).
Le Cujelier, Montbeill. Ois. v. p. 314; Pl. Enl. 660. fig. 2 (1778).
Alauda pratensis, L., Gm. Syst. Nat. i. p. 792. no. 2 (1788).
Anthus pratensis (L.), Bechst. Orn. Taschenb. iii. p. 564 (1812).
Spipola pratensis (L.), Leach, Cat. Brit. Mus. p. 21 (1816).
Alauda sepiaria, Steph. Shaw's Gen. Zool. x. p. 542 (1817).
Anthus sepiarius, Vieill. Nouv. Dict. xxvi. p. 486 (1818).
Anthus palustris, C. L. Brehm, Lehrbuch, Naturg. eur. Vög. i. p. 244 (1823).
Leimoniptera pratensis (L.), Kaup, Nat. Syst. p. 39 (1829).
Anthus stagnatilis, C. L. Brehm, Vög. Deutschl. p. 332 (1831).
Anthus danicus, C. L. Brehm, tom. cit. p. 333 (1831).
Anthus pratorum, C. L. Brehm, tom. cit. p. 333 (1831).
Anthus palustris, C. L. Brehm, tom. cit. p. 334 (1831).
Anthus alticeps, C. L. Brehm, tom. cit. p. 335 (1831).
Anthus tenuirostris, C. L. Brehm, tom. cit. p. 335 (1831).
Anthus musicus, C. L. Brehm, tom. cit. p. 336 (1831).
Anthus virescens, C. L. Brehm, tom. cit. p. 337 (1831).
Anthus lichtensteinii, C. L. Brehm, tom. cit. p. 338 (1831).
Anthus desertorum, C. L. Brehm, tom. cit. p. 338 (1831).
Anthus montanellus, C. L. Brehm, tom. cit. p. 339 (1831).
Anthus tristis, Baill. Mém. de la Soc. d'émul. d'Abbev. p. 14 (1833).
Parus ignotus, Gm. Syst. Nat. i. p. 1006. no. 15, fide Strickland, Cont. to Orn. (1852).

Meadow-Pipit, *Titlark*, *Titling*, English; *Glasian*, Gaelic; *Le Cujelier*, *Pipi des Prés*, French; *Petinha*, Portuguese; *Cinceta*, Spanish; *Coturlin*, Catalan; *Zivedda*, *Pispola*, Italian; *Linguinedda*, Sicilian; *Pespus tal giargir*, Maltese; *Pieplerche*, *Wiesen-Pieper*, German; *De Graspieper*, Dutch; *Englærke*, *Pibelærke*, Danish; *Gratitlingur*, *Thufutitlingur*, Icelandic; *Engpiplærke*, Norwegian; *Ängpiplärka*, Swedish; *Heinakirvinen*, Finnish; *Swiergotek taczny*, Polish; *Stschewritza-lugowaya*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 660. fig. 2; Werner, Atlas, *Insectivores*, pl. 86; Kjærb. Orn. Dan. pl. 17; Fritsch, Vög. Eur. pl. 16. fig. 1; Naumann, Vög. Deutschl. pls. 84, 85; Sundevall, Sv. Fogl. pl. 8. fig. 7; Gould, B. of Eur. pl. 136; id. B. of G. B. iii. pl. 13; Schlegel, Vog. Nederl. pl. 96; Nozemann and Sepp, iii. pl. 209.

Ad. ptil. æst. corpore suprà nigricanti-brunneo, plumis omnibus brunneo marginatis et vix olivaceo tinctis: pileo et dorso saturatioribus: uropygio olivascenti-brunneo, vix nigricante brunneo notato: remigibus saturatè brunneis, primariis vix albido marginatis, intimis olivaceo lavatis: secundariis intimis et tectricibus alarum in pogonio externo conspicuè albido marginatis et olivascente brunneo lavatis: caudâ saturatè brunneâ, rectrice extimâ albâ in pogonio interno dimidio basali obliquè nigricanti-brunneo, rectrice secundâ in pogonio interno ad apicem albido notatâ: capite laterali brunneo, nigricante brunneo notato: corpore subtùs albo: gutture laterali, pectore et hypochondriis nigricante brunneo maculatis: rostro nigricanti-brunneo ad basin: mandibulâ flavicante: pedibus pallidè brunneis: iride brunneâ.

Ad. ptil. hiem. præcedenti similis, sed corpore suprà rufescente brunneo lavato, corpore subtùs flavicante cervino adumbrato, pectore et hypochondriis saturatioribus.

♀ haud a mare distinguenda.

Adult in summer (Pagham, Sussex, 23rd April). Upper parts with the centres of the feathers blackish brown, and the margins dull hair-brown with the faintest olive tinge, the margins being narrowest on the crown and the interscapulary region; rump almost uniform brown, washed with olivaceous; wings dark brown, primaries narrowly edged with dirty white, the inner ones having the margins washed with dull olive-green; inner secondaries and wing-coverts broadly margined on the outer web with dirty white, and washed with olivaceous-brown; tail dark brown, the outer rectrix white, excepting an oblique broad patch from the base nearly to the tip of the inner web, the next in order with a white patch on the inner web at the tip; sides of the head dull brown, marked with blackish brown; underparts white; on the sides of the neck, breast, and flanks profusely marked with rather elongated blackish brown spots; beak blackish brown, inclining to yellow at the base of the lower mandible; legs light brown; iris dark brown. Total length about 5½–6 inches, culmen 0·6, wing 3·0, tail 2·25, tarsus 0·85, hind toe with claw 0·8, hind claw 0·5.

Adult in winter (Brighton, 12th November). Upper parts rather browner than in the summer-plumage, and the underparts washed with yellowish buff, which colour is deeper on the breast and flanks.

Young. The young bird differs very slightly from the adult, in having the spots on the upper parts and breast larger, and the breast and flanks washed with dull reddish buff.

Female. Is undistinguishable from the male in plumage.

In Great Britain this is one of our commonest birds, and is very generally distributed throughout the country, being a resident, only shifting its habitat somewhat according to the season of the year, and in order to seek for better localities to obtain food or shelter. I know of none of our counties in England where it is not common; and in Scotland it is met with on the whole of of the mainland as well as in the Outer Hebrides and Shetland. Mr. Robert Gray (B. of W. of Scotl. p. 115) writes that "the familiar and lively Moss-Cheeper, as this bird is called in Scotland, is everywhere common, often appearing in places where bird-life is scarcely looked for. It is very abundant in North Uist and Benbecula, and indeed for the greater part of the Long Island, extending to the uninhabited rocks and islets far beyond. Even in St. Kilda it may be seen frequenting the neighbourhood of the huts of the lonely inhabitants, its feeble notes being at certain seasons of the year almost the only sound breaking the silent monotony of their weary

life." In Ireland it is likewise common and resident; but, according to Thompson, it suffers greatly during cold weather, and is then even occasionally driven for food to the streets of the towns.

It has, Professor Reinhardt writes (Ibis, 1861, p. 6), been once recorded from Greenland, whence Dr. Paulson received a specimen in 1845; but Dr. Reinhardt himself never saw it in that country. In Iceland it is, according to Professor Newton, "common on low grounds over the whole country, arriving at the end of April and leaving in September;" and Mr. H. C. Müller speaks of it as being extremely common in the Færoe Islands. In Scandinavia it is likewise numerous; and in Norway, according to Mr. Robert Collett, "its range extends from the most southern parts of the country up to the North Cape. But as during the breeding-season it is only found on the great heaths and moors; it never occurs during the summer season in the valleys of the southern parts, but only on the fells above the conifer-growth in the birch-belt, where it breeds in immense numbers. On the coast, however, as well as in the northern parts, it breeds at all heights in localities destitute of tree-growth. In spring and autumn it visits in large flocks all the southern lowlands." In Sweden, Professor Sundevall writes (Sv. Fogl. p. 39), "it occurs as far north as the willow and dwarf birches grow;" and I met with it in every part of Finland I visited, and am informed by Professor Malmgren that it is common even up into Northern Lapland. In Russia it occurs in the extreme northern governments, as I possess specimens from Mezen; and Mr. L. Sabanäeff informs me that it breeds commonly in the Governments of Jaroslaf and Moscow, as also in that of Tamboff. It is more common in Northern Russia; but, according to Daniloff, it breeds in the Government of Orloff; and Kessler records it from Kieff, where, however, it is not numerous. Sabanäeff himself records it as common in the Ural, and especially numerous during migration. It is, Mr. Taczanowski informs me, extremely numerous in Poland, and appears to be equally so throughout the whole of Germany, where it is chiefly a migrant, leaving, however, very late in the season, and returning early in the following spring; but some few remain over the winter, especially during mild seasons. Hintz says that it is becoming rarer in Pomerania, owing to the meadows being regularly mown during the nesting-season, and it is consequently disturbed when incubating. Kjærbölling says (Danm. Fugl. p. 145) that it arrives in Denmark in March and leaves in October, or even as late as November, and is certainly the most common of all the Pipits. In Holland it is likewise a common bird, as also in Belgium and Luxemburg in the spring and autumn, nesting near Ostend; but, according to Baron De Selys-Longchamps, it does not breed in the central portions of Belgium, nor has it been known to do so in Luxemburg. Mr. Carl Sachse informs me that it is common near Coblentz, on the Rhine, arriving in March and leaving in October, but some few winter there. It occurs throughout France, where it is partly resident and partly migratory; and in Provence it is found during the winter, but only in very small numbers in the breeding-season; in the Eastern Pyrenees it is said to be resident. It occurs in Portugal, but whether rarely or otherwise I am unable to say. Dr. Rey obtained one there late in March. In Spain it is, as I am informed by Mr. Howard Saunders, common during the winter; and Major Irby writes to me that "it is very abundant on both sides of the Straits of Gibraltar from October to the end of March."

Passing eastward I find it recorded by Bailly as abundant in Savoy on the spring migration

in March, and on its return in September and October; but only a small number pass the summer and breed in Savoy, principally in the moister and more northern districts. Savi says that it is abundant in Tuscany in the autumn and winter, but he is not aware that it ever breeds there; and Professor Doderlein records it as very common in winter in Sicily, but maintains that it does not ever remain to breed.

In Malta, Mr. C. A. Wright states (Ibis, 1864, p. 61), it is "exceedingly plentiful in October and November, and commences arriving when the Short-toed Larks disappear. A good many stay the winter. Passes again in March." In Greece it appears to be a winter visitant only; and Lindermayer (Vög. Griechenl. p. 77) says that it winters on the islands of the Archipelago, in the Peloponnesus, and Rumelia, arriving about the middle of October and leaving in March, not remaining to breed. I met with it commonly in Southern Germany; and my friend the late Mr. Seidensacher informed me that it did not winter in Styria, but arrived in March, or occasionally in February, and left again in October. Dr. A. Fritsch records it as common in Bohemia during the summer. I observed it in all the countries bordering the Danube in the spring; and Messrs. Elwes and Buckley say that it is common in Turkey. It is said to be numerous in Southern Russia, where Dr. G. Radde (J. f. O. 1854, p. 58) found it common near Simferopol, but did not observe it there in the summer. He shot specimens, however, in May near the Salgir.

It is found in Asia Minor; and Canon Tristram (Ibis, 1866, p. 289) says that it "occurs in small numbers throughout the winter everywhere, and a few pairs were found by us in favourable localities up to midsummer. A specimen shot at Jericho, on new year's day, is so peculiar in its coloration that it might well pass for another species. It is without the dark spots on the flanks, and those on the throat are of the faintest; yet I can see no specific characters to afford a diagnosis. Other specimens obtained in the same district are precisely like our own." In North-eastern Africa it appears to be uncommon, as Captain Shelley (B. of Eg. p. 131) speaks of it as "of rare occurrence in Egypt and Nubia, where it is a winter visitor. I have only seen one Egyptian specimen, which was killed near Alexandria in April;" and Captain Clark-Kennedy informs me that he only met with it once in Egypt, when he saw a pair, in company with some Crested Larks, near El Kab, and shot one, merely to make certain of the species, which, not then knowing that it was so rare in that country, he did not preserve. Mr. Jesse states (Trans. Zool. Soc. vol. vii. p. 239) that he obtained it in Abyssinia; but I find on examining the specimen he obtained, that it is referable to *A. cervinus*, and not, as stated by him, to the present species. In North-western Africa it appears, however, to be more numerous; and Loche records it as common in Algeria, where, he states, it breeds; but this latter assertion I should almost be inclined to doubt, though Mr. O. Salvin shot one at Kef Laks as late as April.

It is not easy to define the limits of its eastern range; for in many instances *A. cervinus* has doubtless been mistaken for it. De Filippi, however, notes its occurrence at Tiflis and Trebizond; and Mr. A. O. Hume states (Ibis, 1869, p. 355) that he obtained it from near Ferozpoor, in India, and writes (Ibis, 1871, p. 36) as follows:—"Although I felt little doubts that the specimens I had procured belonged to this species, I sent one for comparison with European specimens to M. Verreaux, who says:—'In this bird, as in many others received from warm climates, there appears to have been some slight modification in tint; but it is impossible to consider it distinct

from *Anthus pratensis*. Independent of climatal changes, you must be aware that this class of bird is subject to material variations in plumage according to season and age.'" Sir R. H. Schomburgk states (Ibis, 1864, p. 249) that it is found in Siam; but it is most probable that the bird he obtained was not the present species, but *A. cervinus*.

The Meadow-Pipit (or Titlark, as it is usually called) is certainly one of the best-known of our European birds, especially here in Great Britain, where it is common in almost every part of the country, frequenting pastures, fields under cultivation, grassy and sedgy moors and downs close to the sea-shore, and almost invariably open localities, shunning the forest growth or bushy districts. It is also found in damp tracts and on moors at a considerable elevation in mountainous districts; and in travelling on foot through such localities it is one of the birds most frequently flushed. When disturbed it flies up quickly, and flutters about with a peculiar jerky flight, continually uttering its sharp, shrill, chirping call-note. It appears to affect any small damp patch; and I have frequently seen it in such places, even amongst the barren sandhills in close proximity to the sea. In the autumn and winter it deserts the more elevated localities and descends to the grassy lowlands, and it may then more frequently be met with on the sea-shore or near inhabited places; and Mr. Cecil Smith remarks that at the season of the year when the sheep are in the turnip-fields it is a most constant frequenter of the sheep-fold, never mind how wet and muddy, or how hard and frosty the ground may be. During snow and hard weather it likewise resorts to the margins of streams or portions of marshes which have remained unfrozen; but during a continuance of hard weather it suffers very much, probably as much owing to the difficulty of obtaining food as to the cold itself. Though essentially a ground-bird, I have sometimes seen it perch on a tree or bush, and it not unfrequently sits on a wall or large stone. At night it seeks shelter amongst the grass, or under a bush or tuft of heath, and always roosts on the ground. When in search of food it walks with short steps and with ease, keeping the body low, and when alarmed will either crouch until the danger has passed or spring up suddenly, flying off with a jerky wavering flight. As a rule it is by no means shy or difficult of approach; but it is suspicious; and if it sees that it is being pursued, it is not by any means so easy to approach within range of it. During the summer season the food of the Meadow-Pipit consists almost exclusively of insects and their larvæ; but in the winter it varies its diet to some extent by the addition of seeds, though when insect food is to be obtained it is doubtless always preferred; and it is not improbable that it frequents the sheep-folds and farm-yards during the winter to obtain any insects that may be there. They pair tolerably early, and raise two broods during the season, the first eggs being deposited in April, and the second lot about the middle of May; but my friend Mr. Carl Sachse informs me that he has seen one feeding young, which were not ready to leave the nest, as late as September. So soon as the warm weather sets in, and the flocks have broken up into pairs, the male commences to sing, its song being sweet, though not powerful. Macgillivray very faithfully describes the song as "being composed of a series of sharp modulated notes, which it utters on wing, first ascending silently (or emitting only its usual chirp) to the height of about twenty yards, and then descending with expanded wings and tail. Sometimes also it sings when perched on a stone or crag. Its song may be heard from the middle of April to the end of July. During the breeding-season the male is easily alarmed, and flutters over an intruder, emitting its shrill notes; but while incubating, the female will allow a person to walk

close to her without rising; and when she does fly off, it is with a cowering, fluttering motion, with the tail expanded, as if she were under the influence of disease or extreme terror. I have several times caught the female while sitting on her eggs, by creeping up, having previously marked the nest, and clapping my hand upon it."

The nest is neatly constructed of grass straws, lined with finer bents, fine rootlets, and horse-hair, and is somewhat large and bulky. It is always placed on the ground, amongst the grass in an open meadow, or under shelter of a tussock or tuft of grass, and is carefully concealed. The eggs, varying from four to six, but most generally five in number, are subject to considerable variation in colour and markings, but have usually the ground-colour dull light grey, occasionally with a brownish tinge, and are closely spotted and dotted with dusky brown, reddish brown, or purplish grey; some in the series I possess have the spots collected in a ring round the larger end, where they are so closely distributed as to hide the ground-colour, the remainder of the egg being far less closely marked. In size they average $\frac{31}{40}$ by $\frac{23}{40}$ inch, some, however, being a trifle larger and others smaller.

The specimen figured, on the same Plate with *Anthus trivialis*, is the bird I have described in spring plumage, particulars of locality &c. being given above.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Brighton, November 12th, 1868 (*H. E. D.*). *b*. Cookham, September 10th, 1869 (*W. Briggs*). *c*. Pagham, September 3rd, 1869 (*Alfr. Grant*). *d*, ♀. Pagham, April 23rd, 1870 (*R. B. Sharpe*). *e*, ♂. Pagham, July 11, 1870 (*R. B. Sharpe*). *f*, *g*. Aboyne, September 23rd, 1871. *h*. Hastings, September 13th, 1860 (*H. E. D.*). *i*. Aboyne, September 23rd 1871 (*R. B. Sharpe*). *k*. Hampstead, November 18th, 1869 (*Davy*). *l*. Hampstead, September 16th, 1869 (*Davy*). *m*. Sweden (*Wheelwright*). *n*, ♂. Quickjock, Lapland, July 4th, 1864 (*Meves*). *o*, ♂. Leiden, Holland, October 22nd, 1870. *p*. Spain (*Saunders*). *q*. Bergamasca, November 1868 (*Salvadori*). *r*, ♂. Mezen, N. Russia, June 6th, 1873 (*Piottuch*). *s*. Tangiers, Africa (*Olcese*). *t*. North Africa (*Verreaux*).

E Mus. H. B. Tristram.

a. Algiers, 1855 (*H. B. T.*). *b*. Algiers, February 1856 (*H. B. T.*). *c*, ♂. Seaton, March 24th, 1866 (*H. B. T.*). *d*, ♂. Seaton, March 26th, 1866 (*H. B. T.*), *e*. Kishon, March 19th, 1864 (*H. B. T.*). *f*, ♂. Mt. Tegetus, February 22nd, 1858 (*H. B. T.*). *g*, ♂. Gennesareth, March 4th, 1864 (*H. B. T.*). *h*. Castle Eden, Durham (*H. B. T.*).

E Mus. Howard Saunders.

a. Hampstead, September 16th (*Davy*). *b*, ♂, *c*, ♀, *d*. Valencia, October 20th. *e*. Malaga, November 4th (*H. S.*). *f*. Tangier (*Olcese*).

E Mus. Salvin and Godman.

a. Surrey, January 1857 (*F. G.*). *b*, ♀. Cambridgeshire, May 12th, 1856 (*O. S.*). *c*, *juv.* Cambridgeshire, November 14th, 1856 (*F. G.*). *d*, ♂. Bodö, Norway, May 26th, 1856 (*F. G.*).



BERTHELOT'S PIPIT.

ANTHUS BERTHELOTI

231

ANTHUS BERTHELOTI.

(CANARIAN PIPIT.)

Anthus trivialis (L.), Webb & Berth. Orn. Can. p. 16 (1841, nec Linn.).
Anthus pratensis (L.), Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, xv. p. 437 (1855, nec Linn.).
"*Anthus campestris*, Bechst.," Bolle, Journ. f. Orn. 1857, p. 288 (nec Bechst.).
Anthus berthelotii, Bolle, Ibis, 1862, p. 343.
Anthus bertheloti, Bolle, Godman, Ibis, 1872, p. 176.

Figura nulla.

♂ *ad.* suprà grisescenti-brunneus nec olivaceus, plumis omnibus centraliter saturatioribus: uropygio unicolori: corpore subtùs albo: collo laterali, pectore et hypochondriis saturatè brunneo striatis: alis et caudâ ut in *A. pratensi*: rostro brunnescenti-corneo: pedibus pallidè brunneis.

♀ (*juv.*?) corpore suprà brunneo, plumis omnibus conspicuè rufescente marginatis: alis et caudâ ut in mare, sed conspicuè rufescente marginatis.

Adult Male (Teneriffe). Resembles *Anthus pratensis*, but has the upper parts much paler and more uniform in colour, and slightly tinged with grey; and the spots on the sides of the neck, breast, and flanks are usually very small, being mere dull brown narrow striations; arrangement of primaries and tail as in *A. pratensis*; legs very pale brown. Total length about $5\frac{1}{4}$ inches, culmen 0·65, wing 2·95, tail 2·5, tarsus 0·87, hind toe with claw 0·7.

Female in autumn (Madeira, July). Upper parts dark brown, all the feathers broadly margined with rufous, these borders being most conspicuous on the quills, wing-coverts, and tail-feathers; underparts as in the male above described; legs very pale, almost white. This bird appears to me to be in immature plumage.

Obs. This species may at once be distinguished from *A. pratensis* by its paler, less marked upper parts (the rump being greyish brown, entirely unmarked), and by the narrow striations on the underparts, as well as by its somewhat smaller size. According to Bolle it never in any stage of plumage or at any season of the year has any trace of green in its plumage; whereas *A. pratensis* has this colour very conspicuous in its autumn dress. The female above described is certainly unlike any autumn-killed Meadow-Pipit I have ever seen; and the coloration of the upper surface of its body reminds me somewhat of *Anthus richardi*. The under surface of the body in *A. bertheloti* appears to be always white, and not, in the autumn, washed with buff as in *A. pratensis*. Specimens from Madeira approach rather closer to our European bird, but are still fairly distinguishable, though they have the breast more closely and boldly marked than any of the examples from the Canaries. In measurements the five specimens I have examined vary as follows:—

	Culmen.	Wing.	Tail.	Tarsus.	Hind toe with claw.	Hind claw.
	inch.	inches.	inches.	inch.	inch.	inch.
Madeira, ♂	0·65	2·95	2·5	0·87	0·7	0·37
„	0·61	2·95	2·55	0·88	0·7	0·37
„ ♀	0·6	2·8	2·3	0·88	0·62	0·3
Orotava, Teneriffe, ♂	0·65	2·95	2·55	0·88	0·65	0·35
„ „	0·6	2·85	2·38	0·87	0·65	0·35

whereas my series of *Anthus pratensis* from various localities average—culmen 0·62, wing 3·15–3·2, tail 2·5–2·55, tarsus 0·85–0·9, hind toe with claw 0·75–0·8, hind claw 0·45–0·5. In *Anthus bertheloti* the hind claw is not only shorter than in *A. pratensis*, but also much stouter, though not so stout as that of the Tree-Pipit.

The present species is one of these insular forms which, being non-migratory, differ sufficiently from the continental birds to be kept separate as distinct species. Though closely allied to our Meadow-Pipit, it appears to me to be clearly distinct, and at the first glance reminds one much of the Water-Pipit, especially in the coloration of the upper parts.

Mr. Vernon Harcourt, in a review of Dr. C. Bolle's article describing this species, states (Ibis, 1863, p. 230) that he is not prepared to accept it as a good species; but I think that the distinctions above given are sufficient to entitle it to be kept separate. Dr. C. Bolle published (*l. c.*) full particulars respecting the occurrence of this Pipit in the Canaries, and its habits as observed by him there, from which I translate as follows:—"Berthelot's Pipit inhabits the entire Canarian archipelago, where it is exceedingly common; and I met with it from Fuertaventura to the Island of Ferro. Wherever in the volcanic region there is a less-luxuriant vegetation and bare places, it is sure to be found; and it is especially common amongst the rocks and calcined stones which form the predominating portion of the landscape, amongst the flowering *Euphorbiæ*, Balos, and Agulayas; and it more particularly affects the large masses of tufa, remains of old eruptions, which are known in the country by the name of Toscales. From its love of open bare places it frequents, like the Crested Lark, the roads, and is familiar with the sight of man; hence its local names of '*Correcamino*,' or '*Caminero*;' and, according to Berthelot, it bears a third appellation, that of '*Pajaró cajon*.' It is especially numerous in the lower regions and the vicinity of the coast in the Canaries, as it here finds the most suitable localities; and I found it nowhere more numerous than in the dry and stony hillocks of Gran Canaria and Fuertaventura, where it is met with in the same localities as the Pajaró moro (*Pyrrhula githaginea*). It is, however, by no means wanting in the mountains, where the temperature is fresher; and I observed it on Gran Canaria at great altitudes on the Aguimes and Tenteniguada. In these regions it ascends even to the elevated plateaux of the Cumbre.

"There is as yet but little known about the breeding-habits of the present species; and I can only say that it is the only bird which nests on the ground in the fields used in the culture of cochineal. It is resident; and during the winter those which during the summer inhabit the higher regions merely descend to the plains. It lives in pairs during the breeding-season; and afterwards they collect in small flocks, which appear to consist merely of the members of each family. On the dusty soil and on the rocks it runs with celerity and elegance, and when tired

will rest perched on the top of a large tabayba branch, or on a cactus or agave, and will remain quiet for some time without changing its position or moving from branch to branch. It rarely flies off when any one approaches, but merely squats like a Wheatear, and exhibits even less timidity in the presence of any one on horseback.

"It has no real song; and all the note it utters is a soft and plaintive call, which, together with the monotonous song of the Chiff-chaff and the harsh call of the Kestrel, is one of the most familiar notes heard in the Canaries.

"Its food is similar to that of its European congeners; but it appears less insectivorous than most of them are reputed to be, as judging from the contents of the stomachs of several I have examined, seeds, even large ones, form a portion of its diet. It appears to be very subject to a species of tubercular skin-disease, which chiefly attacks the feet and toes, and even the beak. I have observed many wild birds of this species suffering from this disease, and always found them very thin and in bad plumage. Mr. Kittlitz, who visited Teneriffe in 1826, was the first to remark the differences in this Pipit, and wrote as follows:—'They were the first birds we saw running along the road. I shot one, and found it to differ but little from the Water-Pipit, so common in the Riesengebirge—having the legs lighter in colour and the hind claw shorter, being, as it seemed to me, intermediate between that species and *Anthus campestris*.' This short description is, as regards coloration, very true; and in fact a form intermediate between *Anthus aquaticus* and *A. campestris*, putting hybridization out of the question, cannot but be a good species." Dr. C. Bolle further states his belief that the Madeiran Pipit will prove to be the present species, in which, after an examination of specimens from that island, I fully concur with him. Mr. Vernon Harcourt (*l. c.*), speaking of it under the name of *Anthus pratensis*, says that it "is plentifully found in the fields near the sea and in the serras. It utters a low note, running along the ground, and never takes a long flight. The natives consider the bird sacred, and have some legend about its having attended the Virgin at the time of the nativity."

Mr. F. DuCane Godman met with it in the Canaries and Madeira; and Captain Temple Godman also obtained several specimens in the latter locality. The former gentleman writes (Ibis, 1872, p. 177) as follows:—"I procured several examples of it in Teneriffe, where it is exceedingly common. I also saw it in the islands of Palma and Gran Canary, though I failed to procure specimens from either. On the Desertas it is exceedingly common; and I shot several specimens on the smallest island; but unfortunately they were all washed overboard in returning, together with the rest of the things I collected there. *A. bertheloti* takes short flights like *A. pratensis*. It is usually very tame, and runs along the ground, not caring to take flight; whence it has received the name '*Caminero*' in the Canaries, and '*Corre-de-Caminho*' in Madeira."

I have never seen the eggs of this Pipit, which doubtless resemble those of the Meadow-Pipit.

The specimen figured is the one described, and is from Madeira. I have figured this bird as being closer to our Meadow-Pipit than examples from the Canaries.

In the preparation of the above article I have examined the following specimens:—

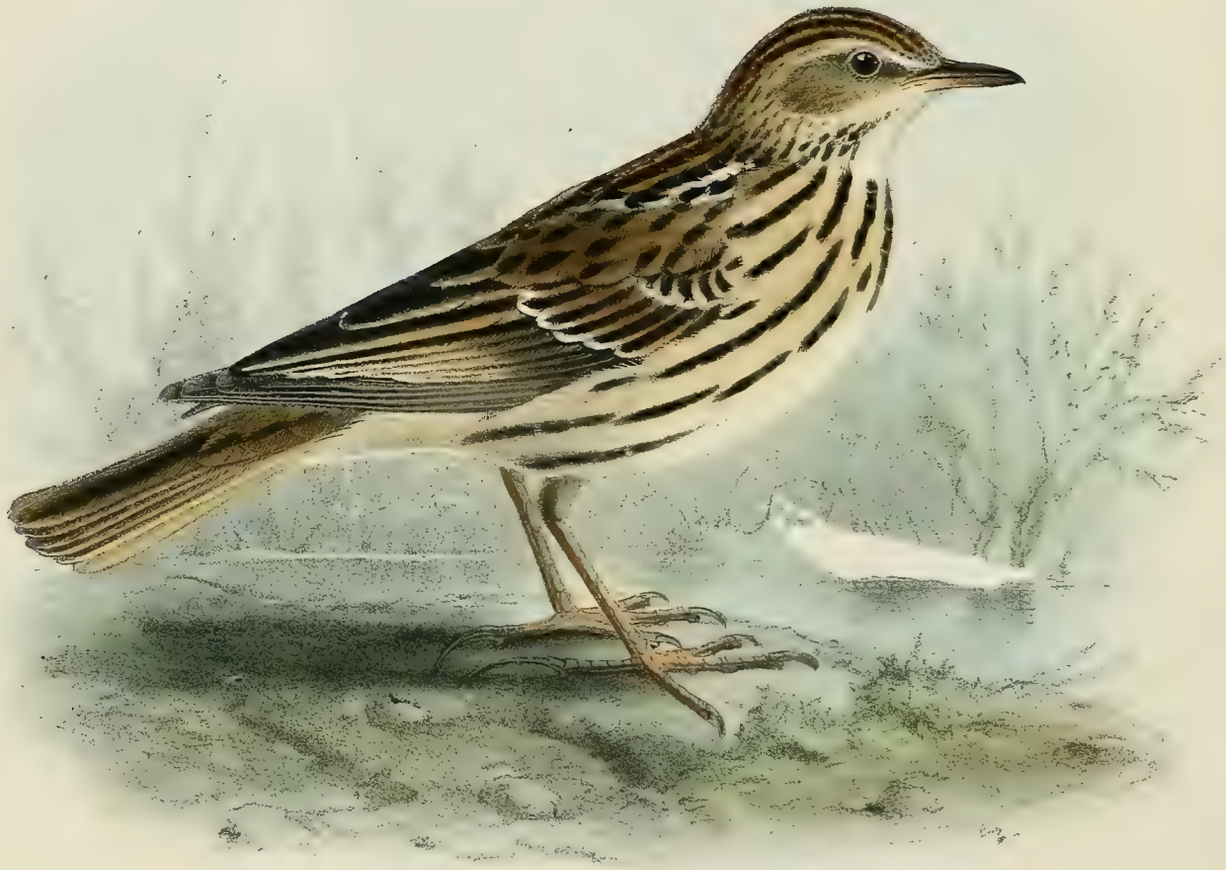
4

E Mus. H. E. Dresser.

a, ♂. Madeira (*Temple Godman*). *b*. Orotava, Teneriffe, April 8th, 1874 (*F. D. Godman*).

E Mus. F. DuCane Godman.

a. Madeira (*Temple Godman*). *b*, ♀. Madeira, July 1st, 1871 (*F. D. G.*). *c*, ♂. Orotava, Teneriffe, April 7th, 1871 (*F. D. G.*).



PETCHORA PIPIT.
ANTHUS SEEBOHMI.

ANTHUS SEEBOHMI, sp. nov.

(PETCHORA PIPIT.)

♂ *ad.* corpore suprà brunneo vix cervino tincto, plumis centraliter nigro-fusco notatis: dorsi plumis nigris brunneo marginatis, in dorsi lateribus albo marginatis: secundariis intimis conspicuè brunnescente cervino marginatis: tectricibus alarum medianis et minoribus valdè albido apicatis, remigibus et rectricibus ut in *A. pratensi* coloratis sed non olivaceo tinctis et rectricibus extimis haud albo sed fumoso-cervino notatis: corpore subtùs albo, in gutture, pectore et hypochondriis cervino lavato, pectore et hypochondriis conspicuè nigro-fusco striatis: rostro robusto, brunnescenti-corneo, ad basin mandibulæ pallidiore: iride fuscâ: pedibus pallidè brunneis.

♀ *ad.* mari similis.

Adult Male (Petchora). In general appearance like *Anthus pratensis*, except that the upper parts are much more varied in colour, reminding one of the Aquatic Warbler, the bill is much larger and stronger, the arrangement of primaries is as in the Tree-Pipit, the elongated inner secondaries are shorter, and the lighter portions of the rectrices are dull smoky buff, not pure white; upper parts generally warm brown with a buff tinge, the centres of the feathers blackish brown; feathers on the upper back deep black, edged with warm brown, those at the sides of the back margined with almost pure white; inner secondaries with rather broad warm buff margins; median and lesser wing-coverts broadly tipped with almost pure white; wings and tail otherwise coloured as in the Meadow-Pipit, but less olivaceous in tinge, and the white on the tail is replaced by smoky buff; underparts white, washed with warm buff on the lower throat, breast, and flanks; breast and flanks marked with broad blackish brown stripes; bill horn-brown, lighter at the base of the mandible; iris dark brown; legs pale brown. Total length about 5·5 inches, culmen 0·6, width of bill at the base of the lower mandible 0·18, wing 3·3, tail 2·25, tarsus 0·95, hind toe with claw 0·85, hind claw 0·44; first primary the longest, the second being nearly equal, and the third a little shorter than the second; fourth 0·2 shorter than the first and second, and 0·15 shorter than the third; fifth 0·28 shorter than the fourth; elongated inner secondaries reaching nearly to the fifth primary.

Adult Female (Petchora). Does not differ from the male.

Two friends of mine, Messrs. H. Seebohm and J. A. Harvie-Brown, who have just returned from a most successful journey to the Petchora in Northern Russia, have, amongst other rarities, brought five specimens of a Pipit which, so far as I can ascertain, is hitherto undescribed; and as they have intrusted it to me to compare and describe, I cannot do better than name it after the former of these gentlemen, he being the first to discover it. It is a bird which, though tolerably closely allied to our Meadow-Pipit, may at a glance be distinguished from that species by the richly varied upper parts, stout large bill, the absence of white on the outer tail-feathers, and the arrangement of the quills, which is nearly as in the Tree-Pipit. It bears in general appearance more resemblance to this latter species, but may be distinguished from that by its almost straight long hind claw and the absence of white on the outer tail-feathers, besides by the richly varied upper surface of the body, in which it reminds one somewhat of the Aquatic Warbler;

but it will be seen from Mr. Seebohm's notes that it differs greatly in habits from both the Tree- and Meadow-Pipits. On examination of a large series of Pipits from various localities, I can find none which could be mistaken for the present bird; and the question naturally arises as to where it retires for the winter; for it is only a summer visitant to the Petchora. Dr. Severtzoff speaks of Pipits intermediate between the Meadow- and Tree-Pipits found by him in Turkestan, and refers to examples of the latter which have the hind claw long and straight as in the Meadow-Pipit; and I cannot help thinking that these latter may possibly have been the present species. At present, however, nothing whatever is known respecting this bird except through Messrs. Seebohm and Harvie-Brown; and I am indebted to the former of these gentlemen for the following résumé of the information obtained by them:—

"I first made the acquaintance of the Petchora Pipit on 16th June, 1875. My friend Harvie-Brown and I were drifting down the great river, stopping now and then, sometimes on the tundra, sometimes on one of the innumerable islands, to cook a meal or rest our crew, who found it heavy work rowing our clumsy craft with only one pair of oars. We had (no doubt about it) fairly got into the 'land of the north wind.' Fortunately the swollen river was running northwards at the rate of four or five versts an hour; but our steersman was always getting the boat out of the main current, and in spite of hard rowing we made slow progress. We had left Ust Zylma about a week after the great ten days' march-past of ice was over. For the first two or three days the weather was hot with a fair wind, and we glided rapidly, with sail set, through a rich undulating country well clothed with pines of various sorts, birch, and willow. Then came the north wind, cold, with occasionally a pouring wet day. We crossed the Arctic circle on the night of the 14th, and on the following day were slowly pulling against a contrary wind. We cast anchor for the night on the bank of a low marshy island chiefly wooded with willow trees. The timber had gradually decreased in size since we left Ust Zylma, and the whole country was beginning to be flatter and more swampy. There was also a considerable change in the birds. Ducks were as numerous as ever; but we seemed to have left the Smew and the Golden-eye behind. At Ust Zylma the Pintail was by far the commonest Duck; but now the Widgeon was the most abundant species, and the Scaup and the Black Scoter began to be common. We often saw Geese and Swans upon the wing; but we had scarcely reached their breeding-grounds. Although we were still two hundred miles from the open sea, Gulls and Oystercatchers had increased in numbers, and we saw the Arctic Tern for the first time. Terek Sandpipers and Temminck's Stints now were common; and we occasionally saw a common Sandpiper. The Willow-Wren was still the commonest warbler; but the Blue-throat was rapidly giving way to the Sedge-Warbler. The White Wagtail remained frequent; but the previously abundant *Motacilla viridis* had become very rare, and *M. citreola* became every day more common. Amongst the willows and birches the Lesser and Mealy Redpoles, the Brambling, the Redwing and Fieldfare, and the Little and Reed-Buntings were common.

"The morning was cool, with alternate sunshine and cloud. I turned out of the boat at three and enjoyed a five hours' ramble before breakfast amongst the willows, my india-rubber boots enabling me to cross the swamps with impunity. I had not been out long before I heard the note of a bird with which I was entirely unacquainted. It was some time before I discovered whence the song proceeded. I do not know whether the bird has ventriloqual powers, or

whether the constant habit of looking for birds in trees deceives the ear; but I was certainly a quarter of an hour before I discovered that the bird was singing high in the air like a Lark. Whilst it was singing the wings and tail were expanded, and vibrating with the efforts of the bird to pour out its song. As soon as the song ceased the bird flew a short distance and commenced hovering and singing again. This continued sometimes for an hour, the bird gradually wheeling round and round, and scarcely changing its position. The song consisted of two parts. The first part, during which the bird appeared to be pouring *out* its song, was a Lark-like *trilla*, very similar to the *trilla* of Temminck's Stint, or the final note in our Wood-Warbler's song. The second part of the song was a low guttural warble, such as the Bluethroat sometimes makes, and sounded like the effort of the bird to trilla whilst it was *in*haling breath. After watching the bird for nearly an hour, and thinking that it would never get tired of singing and come within range, I saw it descend and perch in a willow tree. I listened to it continuing its song for some short time in the tree, and then saw it alight on a piece of very swampy ground, and begin to run about, sometimes almost, if not quite, up to its breast in water, apparently searching for insects. In this position I shot it. About six o'clock I met Harvie-Brown, showed him my 'rara avis,' and we both returned to the marsh, in order that he might make the acquaintance of the bird and learn its song. It was not long before we heard the curious note and caught sight of the bird. We both watched it for some time; it finally alighted on the ground and continued its song there for some short time, when Harvie-Brown shot it. The two birds were exactly alike, both males, most like the Tree-Pipit, but a trifle larger, more richly spotted on the back, and with a long hind claw like the Meadow-Pipit. We christened the bird provisionally the Singing Pipit, and kept a careful look-out for it wherever we stopped.

"A couple of days later found us at Goradok, for some inscrutable reason called Pustazursk in the maps. Here Harvie-Brown and I spent the whole night on the tundra, shooting. Our advance northwards again added fresh birds to our list. Great Snipe, Shore-Larks, and Red-throated Pipits were breeding. We had hitherto seen them only on migration. *Motacilla viridis* had entirely disappeared, and *M. citreola* had become very common. We spent some time stalking Willow-Grouse as they roosted on some conspicuous branch of a birch, shot some Ruffs, a Golden Plover, and some Red-necked Phalaropes, and towards morning found ourselves on a piece of swampy ground over which several of our new Pipits were singing persistently. We each took a bird in hand; and after patiently watching for an hour or more we each got a shot, mine on a tree and Brown's in the air. As before, the birds proved to be both males. Their habits were exactly the same as those we previously watched. The long hind claw is generally understood as marking a ground-perching bird; and so this bird must doubtless be considered. It breeds upon the ground, and probably seeks its food in swamps. It is ultra-aquatic in its habits, and we never met with it away from a swamp. The fact that in the Petchora this bird perches freely in trees may be somewhat of a local habit. We constantly saw birds perching in trees in this district which we are accustomed to consider as almost exclusively ground-birds. The Red-throated Pipit we more frequently shot from a tree than on the ground. On the only two occasions on which we met with the Meadow-Pipit breeding it was seen by Harvie-Brown to perch in trees. During migration the latter bird perched so often in trees that I am not quite sure that the birds we shot out of trees are not last year's *A. cervinus* which have not yet assumed

the breeding-plumage. Lapland and Snow-Buntings we very frequently shot out of trees; Terek's Sandpiper and Temminck's Stint are very fond of perching even upon slender willows, as is also the Wood-Sandpiper. We frequently saw the common Snipe on the summit of a larch; and Harvie-Brown shot one in my presence from a slender twig at the top of a larch at least fifty feet from the ground; but our astonishment at the unusual perching habits of birds reached its climax when we both stood and stared for some minutes at three common Gulls perched near the top of a lofty birch tree, whose summit rose high above the surrounding trees. This habit may gradually have arisen from the fact that whilst these birds are on migration a great part of this country is under water from the floods produced by the sudden melting of two or three feet of snow. In the year 1875 spring began on the 8th of May, and on the 16th we had summer. During these eight days the great river Petchora, at Ust Zylma, a mile and a half wide, rose thirty feet in height, and the islands near the mouth of the delta were almost all flooded; and in many places as we sailed down the river we could see the land more or less under water for miles.

"In the delta we made our head quarters at Alexievka. The water-mark on the walls of the houses was at least four feet from the ground. After the water has subsided the island is one vast swamp covered with willow bushes, full of lakes and with here and there an open swamp or marsh. Here we found the Petchora Pipit by no means uncommon, but for some weeks we were unable to add another specimen to our collection. The birds sang as usual in the air, but dropped into the willow-swamps. Even if we had attempted to shoot them in descending it would have been a hopeless case to retrieve them afterwards. As the summer continued, the hot sun, day and night, soon dried up the swamps, and many birds used to come to the shore of the river to feed. It was impossible for us to recognize many of the species of small birds through our mosquito-veils; and consequently our shore-shooting at this time of the year was very haphazard. Nevertheless we succeeded in adding three more skins of the Petchora Pipit to our collection.

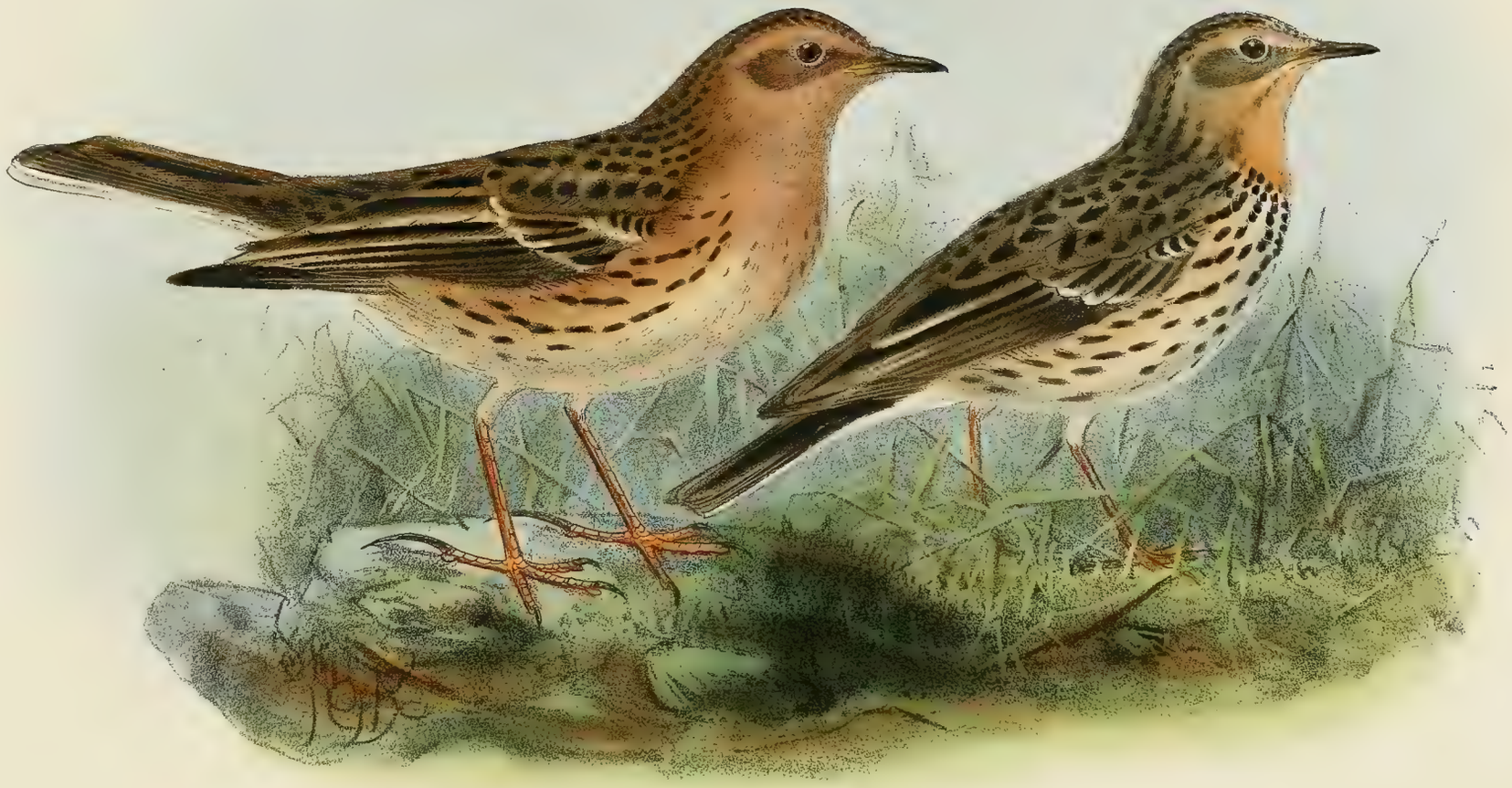
"We had five of their nests brought to us during the last week in June and the first week in July. The eggs were all fresh; and we may probably conclude that this bird breeds a little later than the Red-throated Pipit, as most of the eggs of the latter bird, taken at the same time, were considerably incubated. We did not meet with the Meadow-Pipit in the same locality, or otherwise we might have had some difficulty in distinguishing large varieties of its eggs from those of the Petchora Pipit. Five seems to be the full number. They measure $\frac{32}{40}$ by $\frac{23}{40}$ inch, some a shade larger, others slightly less. The ground-colour is almost entirely obscured by small brown or grey spots. These occasionally form a darker ring round the large end. Most of the eggs have one or two black spots or streaks at the large end. The nest is slightly different from that of the Red-throated Pipit. Instead of being composed of fine round grasses, it is made of flat-leaved grass and water-plants and small leaves; and in two of them we found dwarf Equiseta. We did not meet with this bird further north than the neighbourhood of Alexievka."

The only specimens of this Pipit I have examined are the five examples brought back by Messrs. Seebohm and Harvie-Brown, which they have apportioned out as follows, the specimen in my collection being the one I have described and figured:—*Mus. H. E. Dresser; Mus. H. Seebohm; Mus. J. A. Harvie-Brown; Mus. A. Newton; Mus. Howard Saunders.*



RED-THROATED PIPIT.

Winter plumage



RED-THROATED PIPIT.

ANTHUS CERVINUS.

210

ANTHUS CERVINUS.

(RED-THROATED PIPIT.)

Motacilla cervina, Pall. Zoogr. R. A. i. p. 511. no. 142, "Eastern Siberia" (1811).
Anthus cecilii, Aud. Desc. de l'Egypt, p. 281, pl. 5. fig. 6, "Egypt" (1825).
Anthus pratensis nubicus, Ehr. Symb. Phys. fol. *dd*, "Arabia" (1829).
Anthus rufogularis, C. L. Brehm, Vög. Deutschl. p. 340, "Nubia, Germany" (1831).
Anthus pratensis, Bechst., Evers. Add. ad Zoogr. p. 15, "Orenburg" (1835, nec Bechst.).
Anthus rufogularis, Br., Bp. Comp. List, p. 18. no. 152, "S.E. Europe" (1838).
Anthus cervinus (Pall.), Keys. & Blas. Wirbelth. Eur. p. 48. no. 168 (1840).
Anthus rufigularis, C. L. Brehm, Vogelfang, p. 140 (1855).
Anthus cervinus (Pall.), C. L. Brehm, loc. cit. (1855).
Anthus thermophilus, Hodgs., Swinhoe, Ibis, 1860, p. 55, "Amoy," nec Hodgs.
Anthus ruficollis, Vieill. fide Heugl. Orn. N.O.-Afr. p. 323 (1869).

Der rothkehlige Pieper, German; *Rödstrupig Ängpiplärka*, Swedish; *Peurakirvinen*, Finnish; *Swiergotch rdzawoszyjny*, Polish.

Figuræ notabiles.

Gould, B. of Eur. pl. 140; Naumann, Vög. Deutschl. pl. 85. fig. 1; Audouin, *l. c.*; Middendorff, Sib. Reise, pl. xiv. fig. 1; Sundevall, Sv. Fogl. pl. 8. fig. 6; Fritsch, Vög. Eur. taf. xvi. fig. 5.

♂ *ad. æst.* suprà brunneus nigricante maculatus: remigibus nigricanti-brunneis, in pogonio externo vix pallidè cervino marginatis, secundariis intimis elongatis conspicuè rufescente cervino marginatis: tectricibus alarum nigricantibus, albicante cervino marginatis et apicatis: rectricibus nigricanti-brunneis, rectrice extimâ ab apice supra medium extùs obliquè albâ, secundâ maculâ albâ in pogonio interno versus apicem, reliquis rufescente cervino marginatis: loris, superciliis, gulâ, gutture et pectore ferrugineis rosaceo lavatis: corpore subtùs imo ochrascenti-cervino: pectore et hypochondriis nigricante maculatis: rostro brunneo: pedibus pallidè brunneis: iride brunneâ.

♀ *ad.* mari similis sed gulâ et gutture (nec pectore) ferrugineis, loris et superciliis pallidè rufescenti-cervinis: pectore et corpore subtùs albidis vix cervino adumbratis: pectore et hypochondriis conspicuè nigricante maculatis.

Ptil. hiem. corpore suprà ut in ptilosi æstivali sed paullo rufescentiore: corpore subtùs pallidè ochrascenti-cervino: pectore et hypochondriis conspicuè nigricante brunneo maculatis.

Adult Male in breeding-plumage (Amoy, China, April). Upper parts dull brown, with a reddish brown tinge, each feather with a dark brown broad central stripe, these markings being broadest on the dorsal feathers; quills dark brown, narrowly margined on the outer web with dull rufous buff, secondaries, especially the elongated inner ones, more broadly margined with that colour; wing-coverts blackish

brown, conspicuously bordered and tipped with pale buff; tail blackish brown, the outermost rectrices with the larger portion of the inner web, from the tip extending obliquely towards the base, white, the outer web dirty grey at the tip, thence white nearly to the base, the next feather with a white spot on the inner web towards the tip, remaining rectrices bordered with rufous buff; entire throat, breast, lores, superciliary region, and to some extent the sides of the neck rich ferruginous, with the faintest wash of rosy red in some parts; rest of the underparts yellowish buff on the flanks, and here and there on the breast spotted with oval blackish brown markings; legs fleshy brown; beak dark brown: iris brown. Total length 5 inches, culmen 0·65, wing 3·3, tail 2·4, tarsus 0·9.

Adult Female (Volga, May). Upper parts similar to the male, but rather greyer in shade of colour; the red does not, however, extend below the throat; lores and superciliary region pale rufous buff; breast and remainder of underparts white, washed with pale buff, and thickly spotted on the breast and flanks with blackish brown; soft parts as in the male. Culmen 0·6, wing 3·2, tail 2·4, tarsus 0·9.

Winter plumage (Amoy, November). Closely resembles *Anthus pratensis* in that stage of plumage; and I find it most difficult to distinguish them, if indeed it can be done; as a rule the present species is more spotted on the underparts, and has the spots somewhat larger; a specimen from Constantinople, shot on the 15th of December, which I have figured, has some slight remains of the red throat.

Obs. After having examined a large series of specimens in full breeding-plumage, I can detect no difference between examples from various parts of the Palæarctic Region. As a rule, males from China are somewhat more richly coloured on the throat and breast than those from more western localities; but I have before me a male, collected in Lapland by Professor Newton, which is quite as richly coloured as the average of Chinese specimens, and from Egypt I have several as brightly coloured as any in the series. The females appear in general to have the rufous coloration only on the throat, and to have the breast strongly spotted; but Mr. Collett informs me that he finds but little difference in the plumage of the sexes. Some of the males in the series before me differ greatly in the amount of rufous on the underparts, as also in the amount of spotting on the breast and the upper portion of the flanks. In size there is no appreciable difference in examples from the various localities in Europe, Africa, and Asia.

This species, by earlier writers considered to be identical with our Common Meadow-Pipit (*Anthus pratensis*), has a most extensive range, being found throughout Europe, in Northern Africa (and Canon Tristram sends me a specimen said to have been obtained as far south as Madagascar), and throughout Asia, from Northern Siberia down to Japan, China, and the Andaman Islands. In America it has not been met with.

It has been included in our British list; but the reasons for calling it a British bird are not very valid. Mr. F. Bond possesses a specimen said to have been obtained on the island of Unst, but he is unable to give any information as to who procured it there. He very kindly brought the specimen in question to me for examination; and I was able to ascertain from personal inspection that it is in full breeding-plumage, and probably a female. Mr. Bond informs me that he obtained it out of the collection of the late Mr. Troughton, after his death, without any particulars. On the original label is written, "Red Pipit, *A. rufigularis* (var. of *pratensis*?), Isl. Unst, May 4th, 1854." Another Pipit in Mr. Bond's collection, obtained near Freshwater, is by Mr. Harting (Handbook of B. Birds, p. 109) referred to as being *A. cervinus*; but Mr. Bond informs me that it is certainly not a Red-throated Pipit. I have not had an opportunity of personally inspecting this latter specimen.

In Scandinavia it is common, being found during the seasons of migration in the southern parts of the country, and breeding in some abundance, but very locally, in the most northern parts. In Norway, Mr. Collett writes, "this species is probably most widely distributed in East Finmark, being commoner there in certain localities, according to divers naturalists, even than *A. pratensis*. In West Finmark, possibly, it is less abundant, but would not appear to be wanting anywhere. On the Porsangerfjord I found it at Kistrand, also on Mageröen (North Cape), and at Tromsö. South of the Polar Circle its occurrence has not yet been established with certainty, though it has been supposed to have occurred at Trondhjem; nor is it known to have been observed during migration, no doubt owing to the easterly direction of its line of passage." Mr. Meves caught specimens near Stockholm in the month of September, when they were in full winter dress, and kept them caged to watch the changes of plumage, and states that they attained their full summer dress in May, which is about the time they would arrive at their breeding-haunts in Northern Scandinavia. In Lapland it is common in some parts; and I give below Professor Newton's notes on its nidification near Vadsö, on the Varanger fiord, where Pastor Sommerfelt states that it is common, and in some places, as on the Meske-elf, in Næsseby, at Karlebotten, and at Polmak, more numerous than the Meadow-Pipit. Professor Malmgren informs me that it has been found breeding on Ounastunturi, a ridge behind Muonioniska (the place where Mr. Wolley so successfully collected), by several Finnish students, one of whom was, I believe, Dr. Palmén, who has since finished Von Wright's 'Finlands Foglar,' left in an incomplete state owing to the death of that naturalist. The nests taken on Ounastunturi were obtained in 1867, when the spring was unusually late and cold in Finland, and this inclement weather continued as late as the month of June. In Central Finland this Pipit is only seen during migration; but, according to Von Wright (Finl. Fogl. p. 148), Liljeborg obtained it at Schuretskaja, and Malm shot a pair at Sensjärvi, in Enare Lapland. It occurs in Northern Russia; and Von Heuglin records it (Ibis, 1872, p. 61) as "not uncommon at Waigats, and on the Nikolskaja. In pairs on swampy meadow-lands. The moult of the adult takes place in the beginning of September." I have also received it through our Russian collector, Mr. Piottuch, from Mezen, in the Government of Archangel. Mr. Leonida Sabanäeff informs me that he met with it in the Government of Jaroslaf, where he believes that it breeds; it is, however, he says, commoner near Moscow than *A. pratensis*, and is observed in smaller flocks, and later in the season of migration. Eversmann says that it breeds on the banks of the Volga and Ural rivers. Sabanäeff himself found it common in the marshy portions of the black-earth plains in the Ekaterinburg and Shadrinsk districts. Eversmann records it as commoner than *A. pratensis* in the Government of Orenburg during migration; but this statement is called in question by Bogdanoff. In Poland, Mr. Taczanowski writes, it "is very rare; and I only know of one instance of its having bred, in the marshes near Warsaw." In Germany it is rare; and Borggreve does not include it in his list of birds occurring in Northern Germany; but owing to its close resemblance, when in winter-plumage, to *Anthus pratensis*, it may easily have been overlooked. Naumann figures a specimen with the red throat as an old male of the Meadow-Pipit. It has, according to Professor Blasius (Ibis, 1862, p. 91), been met with on Heligoland; but it does not appear to have been recorded from Holland or Belgium.

In France it is recorded by Degland and Gerbe as a visitor to the southern provinces, and

as sometimes occurring in the northern portion of that country; they add that Mr. Limel found a nest with eggs near Montpellier, a statement which I am inclined to doubt. Jaubert and Barthélemy-Lapommeraye state that it arrives in Provence from Algeria in the spring only; but it is probable that those passing in the autumn have been mistaken for Meadow-Pipits.

The only record of its occurrence in Spain is from Major Irby, who states (Ibis, 1872, p. 201) that he saw it in Southern Spain, on passage, about the 10th of March; but he does not appear to have obtained a specimen; and Mr. Howard Saunders informs me that neither he nor any of his collectors have ever obtained or heard of it in Spain.

Passing eastward again, I find it to all appearance somewhat rare in Italy, and but few well-authenticated instances of its occurrence are on record. Two were obtained by Count Salvadori in the market at Florence in May 1861. In Sicily it is an occasional visitant; and Professor Doderlein possesses a fine series in the Museum of Palermo. He states that it is fond of perching upon trees which it comes across in its flight, and describes its note as a *zip*, *zip*, sharper, more silvery, and more frequently repeated than that of the Tit-Lark. Mr. A. B. Brooke (Ibis, 1873, p. 245) refers to it as being of rare occurrence in Sardinia. I have a specimen from Malta, presented to me by Mr. C. A. Wright of that place, who writes (Ibis, 1864, p. 61) as follows:— "That no notice has been taken of this species as a visitor to Malta is probably owing to its having been considered only a variety. The first specimen that fell into my hands was shot on the 7th of April, 1860, by Signor Pace, who kindly gave it to me. Since then I have seen and shot many individuals. This has generally been in April; but I have also observed it in autumn. Arrives in small flocks. It is interesting to notice the gradation in depth of colour of the throat that a series of these birds presents, sliding into the plumage of *A. pratensis*." The late Captain Rowland M. Sperling also met with it at Malta, and speaks of it (Ibis, 1864, p. 279) as common on the plains of Butrinto, in Albania. Lindermayer and Von der Mühle both include it in their works on the ornithology of Greece; and the latter (Vög. Griechenl. p. 58) speaks of it as a summer resident in the mountains of Platana; but I think it highly probable that he has mistaken *Anthus spinoletta* for the present species, which is only a migrant in far higher latitudes, its breeding-haunts and summer home being in the extreme north of Europe. The Ritter von Tschusi-Schmidhofen informs me that "it has only once been known to occur in Bohemia, Palliardi having shot a male on the 10th May, 1844, on a swampy meadow at Franzensbad. In upper Styria (Mariahof) Pfarrer Hanf has often observed it during migration, and shot several specimens at different times." I have received specimens from Turkey; and Messrs. Elwes and Buckley refer to it as not uncommon in that country during the winter season; so that it appears to pass through Asia Minor and Turkey on its migration to and from North-eastern Africa. Canon Tristram (Ibis, 1866, p. 290) obtained a specimen in Palestine, on the coast of the plain of Sharon, in the month of February; and it may therefore be inferred that it winters there; but North-eastern Africa appears to be its head quarters; for Captain Shelley (B. of Eg. p. 131) speaks of it as "one of the most abundant birds throughout Egypt and Nubia. Its numbers are somewhat decreased by the month of April; but I believe it remains there throughout the year." Von Heuglin considers it to be a resident in North-east Africa, and states (Orn. N.O.-Afr. p. 324) that he has met with it in May, and is sure it occasionally breeds there. It is, he says, met with commonly in Abyssinia and Nubia; but Messrs. Finsch and Hartlaub do not

include it in their work on the birds of East Africa, though I have before me a specimen in the collection of Canon Tristram said to have come from Madagascar. It is found during the winter season in North-western Africa; but Major Loche says that it is not common in Algeria, and only found in small companies of three and four individuals. The specimens in the Museum of Algiers were obtained in the environs of Djelfa. Mr. Taczanowski informs me that he frequently met with it on the borders of Lake Fezzara, where the water is brackish; but it was so shy that he could not obtain a specimen.

To the eastward the Red-throated Pipit is found in Persia, Siberia, and India, to China and Japan. Mr. Severtzoff records it from South-eastern Russia and Turkestan, and states (Turkest. Jevotn. p. 140) that "it occurs in large flocks, keeping separate from the Meadow- and Tree-Pipits; at Sarepta it is more numerous during migration than those two species, but is rarer on the lower part of the Ural river. In Turkestan, however, where those two Pipits are numerous, the present species is only met with singly, and those obtained there and on the Caspian belong to the race having only the throat and not the breast red." Mr. Blanford met with it in South-east Persia and Baluchistan, and has lent to me for examination the specimens collected by him there.

It is rather difficult to trace its range through India, as it has been mixed up by the various authors on Indian ornithology with *Anthus rosaceus*—a species which, it appears to me, bears much closer relationship to *Anthus spinoletta* than to the present bird, and which may at once be distinguished by its sulphur-yellow axillaries. Dr. Jerdon (B. of I. ii. p. 238) states that "it has been found in the Himalayas (where it appears to breed), in China, also rarely in Burmah, the Andamans, in Siam, and in Western India, if Mr. Gould's bird be found to be the same. In the Himalayas it frequents the higher elevations chiefly, and the interior of the hills. I did not myself procure it at Darjeeling; but specimens were obtained in Sikhim by Lieutenant Beavan; and Mr. Hodgson procured it in Nepal;" but a portion of this, especially as to its being found breeding in the Himalayas, must, I think, refer to *Anthus rosaceus*, as out of a large series of Pipits from North-western India I found numbers of *Anthus rosaceus*, but no examples of the present species. In Siberia the Red-throated Pipit occurs commonly in high northern latitudes. Middendorff observed it only occasionally on the Taimyr river; but on the Boganida (71° N. lat.) it was as common as on the Russian shores of the Arctic ocean in Lapland. In Siberia it inhabits the "tundras;" but in South-east Siberia he shot one on the 26th of May in the Stanowoi Mountains. He also refers to another Pipit (of which a female was shot at Udskoj-Ostrog) under the name of *A. rufogularis*; but I agree with Professor Sundevall in thinking that this bird may possibly have been a Rock-Pipit of the form described by Nilsson under the name of *A. rupestris*. It is not recorded by Von Schrenck or Radde, who, on the other hand, refer to the occurrence of *Anthus japonicus* on the Amoor—a species which, Mr. Swinhoe assures me, is perfectly distinct from the present bird, being more closely allied to our Meadow-Pipit. Mr. Swinhoe informs me that it "is found the winter through in moist and marshy places in the south of China (Amoy, Canton, &c.). It usually occurs in small flocks. Its note is lower and softer than that of the Meadow-Pipit at home. If one rises alone it seldom utters a sound, but settles again at a safe distance; but if startled, the whole flock springs into the air; and each, rising and falling with sharp undulation, utters its '*see, see*' at every jerk.

Their food consists of all fresh-water snails, grass-seeds, and small insects generally. After the spring moult the face and the superciliary region are reddish. The feathers of the breast also undergo a partial moult, and the black spots disappear. The birds then begin to move northwards; but other flocks of the same species continue to arrive, staying a few days, and then also going north. This goes on till about the middle of May, when most individuals of the arriving flocks have acquired a ruddy or vinous rosy tint on the throat and breast, and the underparts have only a few dark spots on the flanks. They seem to resort to high latitudes to breed. I have a full summer-plumaged bird kindly given me in exchange by Dr. Schrenck, of St. Petersburg. I was formerly under the impression that the *A. japonicus* of the 'Fauna Japonica' would turn out to be nothing but this species; but during my stay at Ningpo I not only found *A. japonicus* there, but also received a specimen of the same through Dr. Schrenck from Amoorland. It is doubtless a good species, being in habits much more like the Meadow-Pipit of Europe than its *cervine* cousin. *A. japonicus* in winter spreads in large parties over the rice-stubbles; and in rising it hovers and emits the familiar note of the Meadow-Pipit. In summer I did not see it at Ningpo; so I presume it wanders further for the purpose of nidification. We have no record of *A. cervinus* occurring in Japan; but it may probably have been confounded with *A. japonicus*. The latter species is well described in the 'Fauna Japonica.'" I have also lately received from Lord Walden several specimens obtained by Mr. Wardlaw Ramsay on the Andaman Islands, some being in winter plumage, whereas others are nearly in full breeding-dress. Keyserling and Blasius (*l. c.*) state that it occurs in Kamtschatka and on the neighbouring islands; and it may doubtless be looked for in Japan, though I only find *A. japonicus*, which, as before stated, is said to be a distinct species, recorded from there.

I am indebted to Professor Newton for the following notes on the nidification and habits of the present species, they being, with some trifling alterations, those communicated by him to Dr. Bree, and published by the latter in his work on the Birds of Europe:—"On the 22nd of June, 1855, a few days after our arrival at Vadsö, in East Finmark, Mr. Hudleston and I, in the course of a birds'-nesting walk to the north-east of the town, to the distance perhaps of a couple of English miles, came upon a bog, whose appearance held out greater promise to our ornithological appetites than we had hitherto met with in Norway. We had crossed the meadows near the houses, where Temminck's Stint and the Shore-Lark were trilling out their glad notes, and traversed a low ridge of barren moor, where the solicitude of a pair of Golden Plovers plainly told us that they had eggs or young near us. A Dunlin's nest was speedily found, and the bird procured to identify it; for we had hopes of all sorts of waders in that remote district. A little while after, as I was cautiously picking my way over the treacherous ground, I saw a Pipit dart out from beneath my feet, and alight again close by, in a manner which I was sure could only be that of a sitting hen. I had but to step off the grass-grown hillock on which I was standing to see the nest ensconced in a little nook, half covered by herbage. But the appearance of the eggs took me by surprise; they were unlike any I knew, of a brown colour, indeed, but of a brown so warm that I could only liken it to that of old mahogany wood, and compare them in my mind with those of the Lapland Bunting. However, there was the bird running about so close to me, that with my glass I could see her almost as well as if she had been in my hand. That she was a Pipit was undeniable; and thoughts of a

species till then unseen by me began to dawn upon my imagination. I replaced the eggs without disturbing the nest; and carefully marking the spot, we retired. In half an hour or so we returned, going softly to the place; and Mr. Hudleston, reaching his arm over the protecting hassock of grass, dexterously secured the bird in his hand as she was taking flight. I then at once knew, from her pale fawn-coloured throat, that the nest we had found belonged to a species which, up to that time, I believed had been known in Europe only as an accidental visitant, the *Motacilla cervina* of Pallas, the *A. rufigularis* of Brehm. A day or two later Mr. John Wolley returned from a Swan-upping expedition he had been making in the territories of our then imperial enemy. He told us that previously to his starting he had shot, somewhere in the neighbourhood of Vadsö, an example of a Pipit which had puzzled him a good deal. This bird (which during his absence had been kept in a cellar) was produced, unskinned, and still fresh, but unfortunately half eaten by mice. A very short inspection served to show that it was a male of the same species as the hen we had, as above mentioned, taken from the nest. Being too much injured to be preserved, it was reluctantly thrown away.

"In a week's time we were quartered at Nyborg, a small settlement at the head of the Varanger Fjord. Here willows and birches grew with far greater luxuriance, even at the water's edge, than lower down the inlet. Some even attained to nearly twice the height of a man, and formed thickets which, the intervening spaces being exceedingly boggy, were not easily explored. In this secluded spot we found our red-throated friend not unplentiful. We could scarcely go out of the house without seeing one; and in the immediate neighbourhood we procured several more identified nests, making a total of five, and a fine series of nine birds, all, of course, in their breeding-plumage. We had also abundant opportunities of watching their habits, and, above all, of contrasting them with those of the Titlark (*A. pratensis*), which was not uncommon in the district, and to which this species has been so unjustly annexed as a variety. The two birds had, according to our observation, an entirely different range, *A. pratensis* haunting a station less wooded (saving the expression) than that of *A. cervinus*, which latter we found at times feeding on the sea-shore, a habit we did not there notice the former to indulge in. No one with ears either could for a moment be in doubt about their respective notes. It is true that the full song of *A. cervinus* did not differ so strikingly from the more feeble performance of *A. pratensis* as does, for instance, the joyous burst of *A. arboreus*; but it had an unmistakable resemblance to the louder and, perhaps, harsher strain of *A. obscurus*, and in all cases was sufficiently characteristic for one to be quite certain as to the nature of the performer, even when the individual was not in sight. In a word, none of our party had any hesitation as to regarding *A. cervinus* as a *perfectly good species*. I do not take upon myself a description of the specimens which I have had the pleasure of sending to Dr. Bree. A young bird, obtained at Mortensnaes (between Vadsö and Nyborg), July 16th, and which, as it was attended by its parents (both of which were *well seen* by Mr. Wolley and myself), could only have just left the nest, seems to differ only from the young of the Titlark in being of a ruddier complexion; a coloured drawing of it, made only a few hours after its death, is now before me. I have already mentioned what the eggs looked like; and it would be difficult in words to convey a better idea of them.

"All the nests that I saw were simply built of dry bents, without any lining or feathers or hair. I may, however, add that it was only in this restricted locality in East Finmark (between

Vadsö and Nyborg) that we saw this bird; and I believe Mr. Wolley never met with it elsewhere, though a nest of unidentified eggs brought to him in 1854 from Nyimakka (v. p. 1066), a settlement on the upper part of the Muonio river, *may* possibly belong to this species*.

"At Stockholm I saw in the possession of Conservator Meves, the ingenious discoverer of the cause of the bleating noise made by the Common Snipe, a living Red-throated Pipit, which had been taken in a garden near that town, where, I believe, it not unfrequently occurs in its autumnal migration."

Mr. Collett informs me that "it occurs in Norway in company with the Meadow-Pipit, and is not a shy bird. A nest found at Kistrand contained eggs as late as the 11th of July; but they were close on hatching. By their paler colour, mottled with the dull and comparatively large-sized spots of greyish brown that are seen almost invariably in the eggs of this species, and the peculiar twisting lines (which, however, are frequently wanting), they were at a glance to be distinguished from those of *A. pratensis*. The nest lay beneath a willow bush, and was constructed almost entirely of straws, save here and there a single horsehair. The latter material is found in scarcely any of the nests sent to the University Museum from East Finmark, a disparity readily explained from the fact that, in most localities in Finmark, this material is not to be obtained." The stomachs of specimens obtained by Mr. Collett contained the remains of insects, particularly *Otiorhynchus blandus*.

I have in my collection a series of the eggs of this Pipit, all collected by Mr. Nordvi on the Varanger Fjord. In ground-colour they differ greatly, some being greenish grey, others brown, almost resembling the eggs of the Lapland Bunting; one or two are of a rich brown tinge like those described by Professor Newton; and one has several large brown scratches like those seen on eggs of *Plectrophanes lapponicus*; others have the ground-colour greenish grey, and very closely spotted with dark brown; and others, again, have the ground-colour dull brown, and are so closely marked with darker brown as at the first glance to appear to be uniform brown; in size they vary from $\frac{29}{40}$ by $\frac{23}{40}$ to $\frac{31}{40}$ by $\frac{23}{40}$ of an inch. The nests, which were in every case sent to me with the eggs, are constructed of dried grass-bents and grass-straws, lined with finer bents.

I had at first some doubts as to whether Pallas's name would take priority; but from the Academician von Baer's statement (Bericht über die Z. R. A. von Pallas, Königsb. 1831) it appears that some copies at least, of the first volume, of that work were issued in 1811; and Professor Newton assures me he has seen one of the earlier titlepages bearing that date; therefore the species named in the first volume of that work will date from 1811, and not from 1831, which latter is the date on the titlepage of the complete work.

In reply to my inquiry of Mr. Swinhoe respecting the identity of *A. thermophilus*, Hodgs., with the present species, that gentleman writes to me as follows:—"Soon after my first arrival in Hongkong in July, 1854, I went for a stroll with a gun, and among other birds shot a Pipit which was unknown to me. After this I was making up a parcel for Mr. Henry Stevenson, of Norwich, and enclosed a few Chinese birds for him to submit to Mr. G. R. Gray, of the British Museum, for identification. Mr. Stevenson returned me a list of names given by Mr. Gray, one of which was *Anthus thermophilus*, Hodgs. Meanwhile I had forgotten the exact appearance of the Hongkong bird; and having made out our other two visitants to be *A. richardi* and *A. agilis*,

* [The later discovery of this species breeding in Ounastunturi makes this supposition more likely.—A. N.].

I used the name for the third species, which later research showed to be identical with *A. cervinus*. The name *A. thermophilus*, as used by me, must therefore be understood to refer to *A. cervinus*. This is easily to be seen in Ibis, 1861, p. 411, which is, I think, the last time I used this name. On my return to England soon after, when on a visit to Mr. Stevenson, I saw the original Hong-kong Pipit with Gray's label affixed, and discovered then for the first time that it was the fulvous form of *Anthus richardi*, which Bonaparte has separated as *A. sinensis*."

I may here remark that I have examined the type of *A. thermophilus* in the British Museum, and find it to be identical with *Corydalla rufula*.

The specimens figured are, on the one Plate an adult male on the left, and an adult female on the right, both being in full breeding-plumage; on the second Plate are—on the left a specimen in full winter dress, and on the right one also in winter-plumage but having still some remains of reddish buff on the throat. The former of these is from Amoy, and the latter from the Khathane, near Constantinople. The two birds in breeding-plumage are the specimens described, locality being given with the descriptions.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Mezen, N. Russia, June 18th, 1873 (*Piottuch*). *b*, ♀. Malta, October 21st, 1861 (*C. A. Wright*). *c*. Crimea (*Whitely*). *d*, ♀. Volga, May 9th (*Möschler*). *e*. Near Constantinople, December 15th (*Robson*). *f*, ♀. Egypt, December (*E. C. Taylor*). *g*, *h*. Egypt (*G. E. Shelley*). *i*. Egypt (*Rogers*). *k*, *l*. Amoy, December (*R. Swinhoe*) *m*. Tungchow, China, December 1865 (*R. Swinhoe*). *n*. Foochow, China, January 2nd, 1867 (*R. S.*).

E Mus. Lord Walden.

a, ♂. Asia Minor, May 1st, 1865 (*Robson*). *b*, ♂. Ortakeuy, near Constantinople, October 7th, 1866 (*Robson*). *c*. Amoy, China (*R. Swinhoe*). *d*, *e*, *f*. S. Andaman, February 17th, 1873. *g*. February 18th, 1873 (*R. G. Wardlaw Ramsay*). *h*. Senafe, Abyssinia, April 25th, 1868 (*W. Jesse*).

E. Mus. G. E. Shelley.

a, ♂. Egypt, February 10th, 1868 (*G. E. Shelley*). *b*, ♀. Nubia, July 4th, 1870 (*G. E. Shelley*). *c*, ♀. Egypt, October 2nd, 1868 (*G. E. Shelley*).

E Mus. A. Newton.

a, ♂. Nyborg, Lapland, July 3rd, 1855. *b*, ♂. July 3rd. *c*, ♀. June 29th, 1855, Mæske Fjord, Lapland. *d*, ♀. Vadsö, June 22nd, 1855 (*Wolley and Newton*).

E Mus. Ind. Cal.

a, ♀. Dizah, Baluchistan, 4000 feet elevation, March 24th, 1872 (*W. T. Blanford*). *b*, ♂. Persepolis, 4500 feet elevation, June 1864 (*W. T. B.*). *c*, ♂. S.E. of Kurman, Persia, 8000 feet elevation, May 2nd, 1872 (*W. T. B.*).

E Mus. H. B. Tristram.

a, ♂. Egypt. *b*, *c*, *d*. Amoy, China (*Swinhoe*). *e*. Madagascar? (*H. Piers, R.N.*).

10

E Mus. Berol.

a, ♂ *ad.* Egypt (*Hempr. & Ehr.*). *b*, *c.* Tor (*H. & E.*). *d.* Nubia (*H. & E.*). *e*, ♂. Dongola (*H. & E.*).

E Mus. R. Swinhoe.

a, ♀? July 1st, 1855, Nyborg (*A. Newton*). *b*, *c*, *d*, *e*, *f*. Amoy, January 1867. *g*, *h*, *i*, *j*, *k*, *l*, *m*. Amoy. *n*. Amoy, January 1866. *o*, ♀. Amoy, January 1860. *p*. Amoy, April 1866. *q*. Amoy, November 1866. *r*, ♀. Amoy, December 1859. *s*, ♀. Amoy, January 7th, 1860. *t*, *u*. Hainan, March 1868. *v*. Hainan, February 1868. *w*. Foochow, January 1867 (*R. Swinhoe*).

ANTHUS TRIVIALIS.

(TREE-PIPIT.)

Alauda arborea, Briss. Orn. iii. p. 340. no. 2, pl. xx. fig. 1 (1760).
Alauda sepiaria, Briss. tom. cit. p. 347. no. 4 (1760).
Alauda trivialis, Linn. Syst. Nat. i. p. 288. no. 5 (1766, ex Briss.).
Alauda plumata, P. L. S. Müller, Natursystem, Anhang, p. 137. no. 14 (1776).
La Farlouse, Montbeillard, Hist. des Ois. v. p. 319; Pl. Enl. 660. fig. 1 (1778).
Field-Lark, Lath. Synopsis, ii. p. 375. no. 6 (1783).
Alauda minor, Gm. Syst. Nat. i. p. 793. no. 12 (1788).
Alauda arborea, Gm. tom. cit. p. 793. no. 3 (1788, ex Briss.).
Alauda trivialis (L.), Gm. tom. cit. p. 796. no. 5 (1788).
Alauda minor, Lath. Ind. Orn. ii. p. 494. no. 8 (1790).
Motacilla spipola, Pall. Zoogr. Rosso-As. i. p. 512, "Russia and Siberia" (1811).
Spipola agrestis, Leach, Cat. Brit. Mus. p. 21 (1816).
Anthus pratensis, Steph. Shaw's Gen. Zool. x. p. 540 (1817).
?*Spipola pratensis*, Forster, Synop. Cat. p. 53 (1817).
Pipastes arboreus (Gm.), Kaup, Nat. Syst. p. 33 (1829).
Anthus foliorum, C. L. Brehm, Vög. Deutschl. p. 326, "Germany" (1831).
Anthus juncorum, C. L. Brehm, op. cit. p. 326, "Thuringia" (1831).
Anthus herbarum, C. L. Brehm, op. cit. p. 327, "Germany" (1831).
Anthus agilis, Sykes, P. Z. S. 1832, p. 91, "Dukhun."
Fringilla agilis, Tickell, J. As. Soc. ii. p. 578, "Borabhúm and Dholbhúm" (1833).
Anthus trivialis (L.), Fleming, Brit. An. p. 75 (1842).
Anthus montana, Blyth, J. As. Soc. Beng. xvi. p. 435, "Neilgherries" (1847, nec Koch).
Dendroanthus trivialis, Blyth, Cat. Birds Mus. As. Soc. p. 135 (1849).
Dendroanthus maculatus, Blyth, tom. cit. p. 135 (1849).
Pipastes agilis (Sykes), Gould, B. of Asia, part xvii. "India" (1865).
Pipastes montanus, Blyth, Ibis, 1867, p. 312, "India."
Pipastes maculatus (Bl.), Hume, Ibis, 1870, p. 287, "India."
Anthus plumatus (Müll.), Shelley, B. of Egypt, p. 130, "Egypt" (1872).
Pipastes plumatus (Müll.), Hume, Stray Feathers, i. p. 202, "Sindh" (1872).

Pipit des arbres, French; *Cinceta*, Spanish; *Prispolone*, Italian; *Zividduni*, Sicilian; *Tis*, Maltese; *der Baumpieper*, German; *Boompieper*, Dutch; *Trœpiber*, Danish; *Trädpiplärka*, Swedish; *Trœpiplærke*, Norwegian; *Mettakirvinen*, Finnish; *Sviergotek-drzewny*, Polish; *Stschewritza-liesnaya*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 660. fig. 1; Werner, Atlas, *Insectivores*, pl. 87; Kjærb. Orn. Dan.

taf. 17; Fritsch, Vög. Deutschl. taf. 16. fig. 1; Naumann, Vög. Deutschl. taf. 84. fig. 2; Sundevall, Sv. Fogl. pl. viii. fig. 4; Gould, B. of Eur. pl. 139; id. B. of G. B. iii. pl. xiv.; Schlegel, Vog. Nederl. pl. 97; Temminck & Schlegel, Fauna Japonica, tab. xxiii.; Roux, Orn. Prov. pl. 187.

♂ *ad.* pileo et corpore suprà olivascenti-brunneis, pilei et dorsi plumis medialiter saturatè fuscis: uropygio fere immaculato: remigibus saturatè fuscis, primariis in pogonio externo vix olivascente brunneo marginatis, secundariis et tectricibus alarum majoribus conspicuè pallidè brunneo marginatis, his albido apicatis: tectricibus alarum medianis et minoribus conspicuè albido terminatis: caudâ ut in *A. pratensi* picturatâ: corpore subtùs albo, gutture et pectore cum hypochondriis rufescente ochraceo lavatis, pectore valdè nigricante brunneo guttato, et hypochondriis eodem colore striatis: rostro saturatè brunneo, mandibulâ ad basin pallidiore: pedibus pallidè brunneis: iride fuscâ: ungue postico breviore, curvato.

♀ haud a mare distinguenda.

Adult Male (Hampstead, 20th April). Upper parts olive-brown, the feathers on the crown and back, and to a very slight extent also on the rump, with dark brown centres; quills dark brown, the primaries very imperceptibly edged with pale olive-brown on the outer web, secondaries and larger wing-coverts broadly margined with light brown; wing-coverts broadly tipped with dirty white, which is less conspicuous on the larger coverts than on the others; tail as in *Anthus pratensis*; underparts white, on the throat and breast washed with pale rusty ochre; sides of the throat marked with blackish brown, and on the breast very strongly spotted with the same colour; flanks washed with rusty buff, rather paler than the breast, and striped with dark brown; under tail-coverts rather clouded with buff; under wing-coverts dirty white; bill dark brown, under mandible lighter at the base; iris dark brown; legs light brown. Total length 6 inches, culmen 0·6, wing 3·42, tail 2·7, tarsus 0·9, hind toe with claw 0·68, hind claw 0·3.

Adult Male in autumn (Maslak, Turkey, 2nd October). Does not differ materially from the specimen above described, but has the upper surface of the body of a rather richer olive-tint.

Female. Undistinguishable from the male in plumage.

Obs. Besides the difference in the length of the hind claw between the present species and *A. pratensis*, that of the former being much arched, and measuring 0·28–0·3, whereas in *A. pratensis* it is straighter and measures 0·45–0·5, the present species may usually be distinguished by the arrangement of the primaries, having the first and second almost equal, the third about 0·1 shorter than the second, and the fourth about 0·23 shorter than the second, and the fifth about 0·35 shorter than the fourth, whereas in *A. pratensis* the first four primaries are equal, and the fifth about 0·35 shorter than the fourth. I find, however, that in a large series the arrangement of the primaries is never altogether constant, but generally varies somewhat.

After a most careful examination of specimens from various parts of Europe, Asia, and Africa, I find that all are referable to one species. It is true that the examples from India are, as a rule, rather purer and greener in colour, and have the spots on the breast boldly defined; but in the series of European specimens I have before me I have no difficulty in selecting birds absolutely identical in colour and markings, and I have one from the south of England as green as any of those from Asia. The brightest-coloured specimens, however, that I have ever had the opportunity of examining were two from the Khasi and Garo hills, in India, lately lent to me by Major Godwin-Austen.

3

The Tree-Pipit inhabits during the summer season the northern and central portions of Europe and Asia, migrating southward in the late autumn, and remaining over the winter in the south of Europe and Asia and in Northern Africa. It is also said to be met with during the summer season in North-western Africa; but, so far as I can ascertain, this statement somewhat requires further confirmation.

With us in Great Britain it is, though common in some localities, much more local than its close congener the Meadow-Pipit, and does not range so far north. Mr. A. G. More writes that it is scarce in Cornwall and Wales; but Mr. Cecil Smith informs me that it is a "common species during the summer in Somersetshire, generally arriving early in April." He says, "A short time ago, about the end of October, I was staying for a few days at Exmouth; and on Sunday the 26th as I was taking a walk along the cliffs I saw a flock of about twenty Tree-Pipits collected together. They were very restless, flying in flocks from the top of one bramble or furze-bush, on which they were most of them perched, to another; they were probably collected here preparatory to taking their migratory flight. I mention this little incident of seeing the flock of Tree-Pipits collected together at this time of the year, as I see Meyer rather thinks they migrate singly, and not in flocks." It is tolerably common in most parts of the counties near London, in suitable localities; and Mr. Stevenson and Mr. Cordeaux speak of it as a common summer resident in the eastern counties. In Scotland, according to Mr. R. Gray (B. of W. of Scotl. p. 114), it is in general rather rare than otherwise; and he writes respecting its distribution as follows:—"The only Scottish district in which I have found this summer Pipit in any thing like abundance, is comprehended within a circle of a few miles around Glasgow. In the neighbourhood of Possil it is very common in the outskirts of woods, especially on its arrival in spring, and may be observed perched on the summit of an elm or ash tree, from which it repeatedly ascends to a height of twenty or thirty feet, uttering a series of twitterings, and returning to its perch with almost motionless wing, the descent being slowly performed in a curve. In other parts of Western Scotland the species is distributed from Inverness-shire to the Rhinns of Galloway, but is by no means plentiful. I have found it in scattered pairs throughout the summer near Girvan, in Ayrshire, and also in the south of Wigtownshire, where in autumn its numbers increase for about a week or ten days previous to its migratory flight southwards. On the east coast this Pipit seems equally dispersed over the seaboard counties from Berwick to Banffshire, extending its flight occasionally as far as Orkney. In some of the inland counties I have also observed it, viz. in Dumfries, Stirling, and Roxburgh. Mr. Alston likewise finds it in the Upper Ward of Lanarkshire." In Ireland, according to Thompson, it is not satisfactorily known to have occurred; nor do I find it recorded from Greenland, Iceland, or the Færoe islands.

In Scandinavia it does not range so far north as the Meadow-Pipit. Mr. Collett writes that it breeds commonly in the valley of the Maalselv, near Tromsö, in Norway, where he met with it in June 1872. It does not appear to occur further north, though he thinks it may possibly be found in Alten. On the Swedish side it is found, according to Nilsson and Sundevall, from Skåne up into the arctic circle, though not so common in the north as *A. pratensis* and *A. cervinus*; Lowenhjelm met with it at Lycksele and Quickjock; Malm observed it in Enare-Lapland, but not at Utsjoki; Professor Liljeborg found it numerous at Tromsö. In Finland it is common throughout the entire country, and, Professor Malmgren informs me, is found up into 68½° N.

lat. in Southern Lapland. I found it common in Southern Finland; and Mr. Sabanäeff informs me that it is "very common in Central Russia, as also in the Ural, wherever the country is wooded; Hoffmann met with it in the extreme northern portions of the Government of Perm." In Poland, the Baltic Provinces, and Northern Germany it is extremely common, in all suitable localities, during the summer season; and Hintz says that it is probably the commonest of the Pipits in Pomerania. Dr. E. Rey says that it is common in Saxony, arriving about the middle of April; and Mr. Carl Sachse informs me that it is very numerous near Coblentz, on the Rhine, arriving late in March or early in April, and occasionally as early as February, and he has heard its song on the 14th of that month. It leaves in September. It is likewise common in Denmark, arriving, Kjærbölling says (Danm. Fugle, p. 147), about the middle of April, or often earlier, according to the state of the weather, and leaves again late in August or early in September. In Holland and Belgium it is common from April to September; and, according to Degland and Gerbe, it is abundant throughout the greater part of France between spring and autumn; but in Provence it is principally a visitor on migration, and it is only in the higher districts that any remain to breed. In Portugal, Professor Barboza du Bocage speaks of it as rare. But in Spain it appears to be common: Lord Lilford met with it there; and Mr. Howard Saunders writes (Ibis, 1871, p. 216) that it is "generally distributed from autumn to spring," and he believes that some few breed in the high plateaux. Major Irby informs me that it only occurs near Gibraltar on passage, and is common in April, but he did not observe any during the autumn migration. Passing eastward, again, I find it very numerous in Savoy, where Bailly says it is the most numerous of the family from the end of March to October, after which it becomes very scarce. It is abundant in Italy on the spring and autumn migrations; and in some parts small numbers remain throughout the winter; some also breed in Lombardy and the northern provinces. In Sicily it is very numerous on the migrations, and many stop the entire winter; but it is not recorded by Doderlein as breeding there. In Malta, Mr. C. A. Wright speaks of it as "very common; arrives in small flocks in spring and autumn, which soon get dispersed over the country. It departs in May, to return in September and October, a few passing the whole or part of the winter with us."

In Greece, Dr. Krüper says, it is only met with during the two seasons of migration. Lindermayer records it as only rare in the Peloponnesus, and he never observed it on the islands. In Southern Germany it is tolerably common; and Mr. Seidensacher informed me that in Styria he found it common in April and October. In Bohemia, though formerly it used to be rare, it is now, Dr. Fritsch says, very common. I observed it in various parts of Wallachia and Bulgaria in April; and I have received several specimens from near Constantinople. Von Nordmann says that it breeds in the Crimea, Abasia, and Imeritia; but in the neighbourhood of Odessa it is merely a visitor during migration. Ménétries records it as common in the mountains of the Caucasus to an altitude of 8000 feet; and Dr. Krüper says that it occurs in Asia Minor during passage. Canon Tristram writes (Ibis, 1866, p. 290) that in Palestine "it is a scarce bird, but occurs in the winter as well as in spring, though at the former period it was only obtained by us in the Jordan valley. It breeds in the north." In Northern Africa it is common; and, according to Von Heuglin (Orn. N.O.-Afr. p. 224) it is a tolerably rare winter visitant to Egypt. Hemprich and Ehrenberg found it in Nubia and Arabia; Lefebvre in September in Eastern Abyssinia, at

Schirié; and Captain Shelley says that "it arrives about March, when it becomes plentiful throughout Egypt and Nubia." In North-western Africa it is, Major Loche says, common during winter; and Canon Tristram (Ibis, 1859, p. 421) met with it there in small flocks throughout the winter. It has, moreover, been met with as far south as Caffreland; for Professor Malmgren (Ibis, 1869, p. 230) records one as killed on the Limpopo, in Caffreland, between lat. 25° and 26° S., by Wahlberg. Mr. J. H. Gurney, jun., says (Ibis, 1871, p. 85) that it is common in Algeria during the summer—a statement which, however, is not confirmed by other travellers who have explored in North-west Africa.

To the eastward it is met with throughout India and Siberia to China and Japan, and has been several times redescribed and split into various subspecies, none of which, however, I can allow, but, after a careful examination of a large series of specimens, can fully indorse the following remarks by Mr. A. O. Hume, who writes (Ibis, 1871, p. 35):—"In a late number of 'The Ibis' I mentioned that, in my opinion, *Pipastes agilis*, *maculatus*, and *arboreus* were one and the same species. Previously to writing this I had sent home specimens picked out by Dr. Jerdon from my collection as typical *maculatus* and typical *arboreus*, the one being of a greener tint everywhere, the other browner or yellower. I have an enormous series of this species from all parts of India, southern and northern, plains and hills; and I think I can safely say that they one and all unquestionably belong to the same species as the two typical forms which were sent home. In reference to these M. Verreaux furnishes the following remarks:—'The careful comparisons that I have made prove that your birds are both nothing more than *Anthus arboreus*, a species very common with us here. I had already in my possession a large number of specimens of these birds from India; and I had already come to the same conclusion as you have done, that all are referable to this species. This is another of those birds which undergo considerable local modifications according to climate and country.'" Mr. A. O. Hume speaks of it with doubt as inhabiting Sindh, and states that it is "almost wanting," probably owing to the lack of suitable localities. Dr. Henderson met with it in Yarkand, and writes ('Lahore to Yarkand,' p. 226) that "numerous specimens were obtained in the neighbourhood of Sānju and Oi Togrāk, in the plains of Yarkand. They were found in the fields among cultivation, and were precisely similar to the specimens obtained in the plains of India." Dr. Jerdon writes (B. of India, ii. p. 228):—"It is found all over India in the cold season; for it is a winter visitant only, coming early in October and departing about the end of April. It frequents gardens, groves, thin tree-jungle, also occasionally grain-fields, beds of woody streams, &c. It is social in its habits, many being generally found together. They usually feed on the ground, on various insects and also on seeds, but on being disturbed fly up at once to the nearest tree. They now and then feed on trees, hopping about the upper branches, and occasionally snapping at an insect on the wing. It is said by the natives to kill many mosquitoes, hence some of the native names. Mr. Blyth says he has seen small parties of them flying over their haunts, in a restless unsettled way, now and then alighting on a tree, and uttering a slight chirp, and continuing this till nearly dark. Its flesh is used by falconers as a restorative to the Bhyri, and is said to be very delicate. It is taken in numbers for the table at Calcutta and elsewhere in Bengal, and sold as Ortolan. Colonel Sykes's remark (which must have arisen from a mistake), 'found on open stony lands,' is of course not at all applicable to this bird, and misled many in

identifying this species with his description." Captain Beavan met with it commonly in the cold weather about Barrackpore and in Maunbhoom—in the former locality in bamboo-topes, and in the latter amongst mango-trees, and says that the natives of Maunbhoom call it "*Chancheeree*," or "*Chanseeree*." Mr. Blanford (Ibis, 1870, p. 469) records it from the Irawadi valley, where he met with it at Thayet Myo and Bassein. It does not appear to leave some parts of India till late in the spring, as Mr. W. E. Brooks writes (Ibis, 1869, p. 57) that he frequently saw it near Nynee Tal and Almorah as late as April and May, but he thinks that it passes further north to breed; and doubtless those which are found so numerous in the plains of India are birds which have spent the nuptial season in the more northern portions of Asia. It certainly breeds in Eastern Siberia, but does not appear to range very far to the north. Von Middendorff never met with it in the high north, but found it common in the woods on the Stanowoj Mountains, along the coast of the Sea of Ochotsk, and on the islands. It was also equally numerous on the Lena, near Jakutsk. Von Schrenck met with it commonly, and shot several, near the Nikolaiefsk post in the late summer. In the spring Mr. Maximowicz obtained it at Kidsi and Dshäi, and on the Schilka in May. Dr. Radde states that he saw large numbers on the Tarei-nor on the 24th of April, but on the Tunkinskischen Mountains he did not observe it before the 6th of May. On the return migration he met with it in the Bureja Mountains from the 31st of August to the 20th of September. It is recorded by Père David and Mr. Swinhoe from China; and according to the latter gentleman it is there a winter visitant, few, if any, ever remaining to breed. He speaks of having observed it at Foochow, Takoo, Peking, Amoy, Hongkong, Macao, and Canton, and, referring to its occurrence at the latter places, writes (Ibis, 1861, p. 36) as follows:—"Numbers of this lively species are constantly to be met with among the grass and underwood beneath the small pine-trees at Hongkong. As you stroll through a plantation of these firs, the little fellows spring up with a note '*see*' (strongly sibilant), and with a curved flight alight on the branches above, on which they walk up and down, often uttering their note and shaking the tail. Each step you take puts up one at least; and as soon as you have passed, they drop quietly on to the ground behind you, and resume their pursuit of food." Near Takoo and Peking he found it common in the month of September, but did not see any later than that. He speaks of it as abundant in the winter in the island of Formosa, in all groves and copses, and equally common in Hainan, where he observed it at most of the places he visited, but supposes that, as in Southern China, it is only a winter visitant. Messrs. Temminck and Schlegel met with it in Japan; and Wallace obtained it at Batchian.

In its habits the Tree-Pipit differs from the Meadow-Pipit in affecting gardens, groves, and wooded places, or the immediate vicinity of woods and thickets, in preference to the open grassy localities or heaths, where the latter bird is always to be met with. I have, it is true, sometimes seen it in the open, but never far distant from trees or bushes; and it is generally met with, when feeding, on the ground underneath trees, and when disturbed flies up and perches amongst the branches. It affects open places in conifer groves or places thinly covered with trees and overgrown with heath or broom, or where blueberries or cranberries are found growing in abundance.

The call-note of the Tree-Pipit is a clear loud note, but somewhat harsh, and is frequently to be heard at all seasons; it differs from the call-note of the Meadow-Pipit in being deeper in

tone, harsher, and rather more prolonged. The song of the male is very loud, rich, and full, and in compass and variety far surpasses that of any other of the Pipits, somewhat resembling the song of the Canary. It sings during fine weather soon after its arrival in the spring, and is in full song during the time when the female is incubating, but is not often heard after the first or second week in June. Naumann says that it sings from sunrise throughout the day, until the shades of evening commence to fall, and is a most energetic songster. The song is never uttered from the ground, but from a branch, often, indeed, from the summit of a tolerably large tree, especially a birch; and during the ecstasy of song it floats through the air from tree to tree, either rising or falling, continuing its song sometimes as it settles, or ending it just before it resumes its perch. When soaring through the air it bears some resemblance to the Sky-Lark. Like all the Pipits, its food consists chiefly, if not solely, of insects, which it usually picks up from the ground chiefly amongst the grass in the immediate neighbourhood, or under the shade of large trees; small grasshoppers, coleoptera of various kinds, spiders, small flies, insects, and insect-larvæ of various kinds appear to form its staple food; and it does not ever appear to pursue insects on the wing, but catches them when on the ground or amongst the grass. When on the ground feeding, if it is disturbed it merely flies up and perches on a branch, rarely flying away to any distance.

Its nest, which is placed on the ground, usually laterally well concealed amongst the grass, is most frequently to be found in a wood or along the margin of a copse, not unfrequently on the side of a wood-road, and is constructed of dried grass blades and bents intermixed with moss, and tolerably neatly lined with finer grasses, bearing a general resemblance to the nest of the Meadow-Pipit. The usual number of eggs is four or five; but my friend Mr. C. Sachse informs me that he has on several occasions found six. The first eggs are deposited early in May; and two broods are usually reared in the season. Mr. Sachse writes that he has seen half-grown birds in September. The eggs are extremely variable both in colour and markings, and differ greatly from those of the Meadow-Pipit. I have some which on a greyish ground are so thickly marked with small dark red spots as to appear almost uniform dark red, others marked with dark hair-brown on the purplish white ground, or almost unspotted, being merely blotched with a few rich purplish brown large markings, and others, again, marked with tolerably large rich reddish marblings and spots on a reddish white ground. In size they vary from $\frac{31}{40}$ by $\frac{25}{40}$ to $\frac{33}{40}$ by $\frac{27}{40}$ inch, and in shape resemble those of the common Meadow-Pipit.

The specimen figured is an adult male killed in Great Britain, and is the specimen described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Kingsbury (*Harting*). *b*, ♀. Highgate, August 21st, 1869 (*Davy*). *c*, ♂. Highgate, August 23rd, 1869 (*Davy*). *d*. Cambridge, May 1862 (*Fox*). *e*, ♂. West Drayton, June 20th, 1869 (*Paraman*). *f*, ♂. Cookham, May 1865 (*W. Briggs*). *g*, ♂. Hampstead, April 20th, 1870 (*Davy*). *h*, ♀. Hampstead, April 27th, 1869 (*Davy*). *i*. Pagham, September 3rd, 1869 (*Grant*). *k*. Crimea (*Whitely*). *l*, ♂. Maslak, Turkey, October 2nd, 1870 (*Robson*). *m*, ♂. Ortakeuy, Turkey, April 22nd, 1871 (*Robson*). *n*, ♂. Olympus, Greece, April 1st, 1870 (*Dr. Krüper*). *o*, ♂. Dauria (*Dybowsky*). *p*, ♀. Nubia, April 6th,

1868 (*Shelley*). *q, r.* Egypt (*Rogers*). *s*, ♂. Lake Baikal (*Dybowski*). *t*, ♂. Etawah, India, March 23rd, 1869 (*Brooks*). *v*, ♂. Etawah, India, December 29th, 1869 (*Brooks*). *w*, ♀. Etawah, India, March 18th, 1869 (*Brooks*). *x.* India, March 23rd, 1868 (*Marshall*). *y.* India (*Hume*).

E Mus. Lord Walden.

a, b, c. Maunbhoom, India, December and February (*R. C. Beavan*). *d, e, f, g, h.* Darjeeling. *i, j.* Cashmere (*Dr. Jerdon*). *k, l.* Simla (*S. Pinwill*). *m.* Umballah, October (*R. C. Beavan*). *n.* Umballah, February (*Dr. Scott*). *o, p.* Nepal. *q, r.* Lachoong, Sikkim, September and October (*H. J. Elwes*). *s.* Tongoo. *t.* Amoy, February (*R. Swinhoe*).

E Mus. H. B. Tristram.

a. Castle Eden, May 1850 (*H. B. T.*). *b*, ♂. Algiers, April 23rd, 1856 (*H. B. T.*). *c*, ♂. Samaria, April 7th, 1864 (*H. B. T.*). *d*, ♂. Asia Minor (*Robson*). *e*, ♀. Etawah, India, September 23rd, 1870 (*Brooks*). *f*, ♀. Etawah, India, September 14th, 1869 (*Brooks*). *g*, ♀, *h*, ♀, *i* ♂. Etawah, India, October 15th, 1870 (*Brooks*). *k*, ♂. Etawah, India, October 17th, 1870 (*Brooks*). *l*, ♀. Etawah, India, October 18th, 1870 (*Brooks*). *m*, ♀. Etawah, India, December 13th, 1869 (*Brooks*). *n*, ♂. Durmsala, India, April 10th. *o.* India (*Jerdon*). *p.* India (*Blyth*). *q*, ♂. Etawah, India, October 1869 (*Brooks*). *r*, ♀. Almorah, India, April 25th, 1868 (*Brooks*). *s, t.* Hongkong, China, February 1860 (*Swinhoe*).

E Mus. W. T. Blanford.

a, ♂. Teheran, Persia, August 17th, 1872 (*W. T. B.*).

E Mus. Major Godwin-Austen.

a. Cherra Pongee, Khasi Hills. *b.* Base of Garo Hills, India (*G.-A.*).



TAWNY PIPIT.

198

ANTHUS CAMPESTRIS.

ANTHUS CAMPESTRIS.

(TAWNY PIPIT.)

Alauda campestris, Brisson, Orn. iii. p. 349. no. 5 (1760).
Alauda campestris, Linn. Syst. Nat. i. p. 288. no. 4 (1766).
Le Fiste de Provence, Buff. Hist. Nat. Ois. v. p. 194; Pl. Enl. 654. fig. 1 (1788).
La Pivote Ortolanne de Provence, Buff. tom. cit. p. 195; Pl. Enl. 654. fig. 2.
Rousseline ou Alouette des marais, Buff. tom. cit. p. 345; Pl. Enl. 661. fig. 1.
Alauda mosellana, Gm. Syst. Nat. i. p. 794. no. 16 (1788, ex Buff.).
Alauda campestris, Gm. tom. cit. p. 794. no. 16*a* (1788, ex Briss.).
Motacilla maculata, Gm. tom. cit. p. 965. no. 92 (1788).
Motacilla massiliensis, Gm. tom. cit. p. 965. no. 93 (1788).
Sylvia massiliensis (Gm.), Lath. Ind. Orn. ii. p. 531. no. 85 (1790).
Sylvia maculata (Gm.), Lath. tom. cit. p. 532. no. 86 (1790).
Alauda paludosa, Bonnat. Orn. i. p. 313, "Alsace and Poland" (1790).
Alauda mosellana, Gm., Bechst. Vög. Deutschl. iii. p. 152 (1793).
Anthus campestris (Gm.), Bechst. Orn. Taschenb. iii. p. 564 (1812).
Alauda campestris, Gm., Steph. Shaw's Gen. Zool. x. p. 539 (1817).
Vitiflora massiliensis (Gm.), Steph. tom. cit. p. 570 (1817).
Vitiflora maculata (Gm.), Steph. tom. cit. p. 571 (1817).
Anthus massiliensis (Gm.), Vieill. Nouv. Dict. xxvi. p. 503 (1818).
Anthus maculatus (Gm.), Vieill. tom. cit. p. 504 (1818).
Anthus rufescens, Temm. Man. d'Orn. p. 267, "Germany and France" (1820).
Anthus rufus, Vieill. tom. cit. p. 328, "Alsace and Poland" (1820).
Anthus campestris (Gm.), C. L. Brehm, Vög. Deutschl. p. 324, "Germany" (1831).
Anthus agrorum, C. L. Brehm, tom. cit. p. 324, "Renthendorf" (1831).
Anthus subarquatus, C. L. Brehm, tom. cit. p. 325, "Eastern Germany" (1831).
Anthus flavescens, C. L. Brehm, tom. cit. p. 325, "Nubia" (1831).
Alauda grandior, Pall. Zoogr. Rosso-As. i. p. 525. no. 152, "Mongolia" (1831).
Agrodroma campestris, Swain. Classif. Birds, ii. p. 241 (1837).
?*Corydalla vierthaleri*, C. L. Brehm, Vogelf. p. 137, "N.E. Africa" (1855).
?*Corydalla gracilis*, C. L. Brehm, tom. cit. p. 137, "Greece" (1855).
Corydalla campestris (Gm.), C. L. Brehm, ut suprà, "Germany" (1855).
Corydalla agrorum C. L. Brehm, ut suprà, "Germany" (1855).
Corydalla subarquata, C. L. Brehm, ut suprà, "Nubia" (1855).
Corydalla rufescens (Temm.), C. L. Brehm, ut suprà, "Nubia" (1855).
Corydalla striata, L. Brehm, Naumannia, 1855, p. 279 (1855).
Corydalla arvensis, L. Brehm, ut suprà (1855).
Corydalla septentrionalis, L. Brehm, ut suprà (1855).
Corydalla arenaria, L. Brehm, ut suprà (1855).

2

Pipit rousseline, French; *Calandrina*, Catalan; *Petinha*, Portuguese; *Curintuni*, Sicilian; *Calandro*, Italian; *Bilblun*, Maltese; *Der Brachpieper*, German; *De Duinpieper*, Dutch; *Fältpiplärka*, Swedish; *Swiergotckpolny*, Polish; *Stschewritza-polewaya*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 654. figs. 1, 2, 661. fig. 1; Werner, Atlas, *Insectivores*, pl. 85; Kjærbölling, Orn. Dan. taf. xvii.; Fritsch, Vög. Eur. taf. 16. fig. 8; Sundevall, Sv. Fogl. pl. 8. fig. 5; Naumann, Vög. Deutschl. pl. 84. fig. 1; Schlegel, Vog. Nederl. pl. 94; Roux, Orn. Prov. pl. 191. figs. 1, 2; Gould, B. of Eur. pl. 137; id. B. of G. B. iii. pl. 9.

♂ *ad.* suprà grisescenti-ochraceus: pileo et dorso indistinctè fulvido striatis, uropygio vix pallidiore: remigibus nigricanti-brunneis, primariis in pogonio externo vix cervino marginatis, secundariis et tectricibus alarum latè rufescente ochraceo marginatis, his eodem colore apicatis: rectricibus duabus externis albidis, in pogonio interno dimidio basali nigricante marginatis: reliquis nigricanti-brunneis, centralibus rufescente ochraceo marginatis: superciliis, gulâ et corpore subtùs albidis isabellino lavatis: pectore et hypochondriis rufescente isabellino adumbratis, illo maculis nonnullis fuscis notato: rostro suprà nigricante, subtùs versus basin flavido: pedibus flavicanti-brunneis: iride brunneâ.

♀ haud a mare distinguenda.

Adult Male (Portugal, April). Upper parts sandy ochraceous, with a grey tinge, almost all the feathers with a dull dark brown centre, which gives the upper parts an indistinct striated appearance; rump lighter in colour and less marked with brown; upper tail-coverts similar, but the feathers have the central stripe more fully developed; wings blackish brown, primaries very narrowly margined with yellowish buff, secondaries and upper wing-coverts broadly margined, the latter also broadly terminated with tawny ochre; the two outer rectrices yellowish white, with a broad blackish brown border reaching from the base nearly to the tip of the inner web; remaining tail-feathers blackish brown, the central ones bordered with tawny ochre; from the base of the bill extending over and behind the eye a yellowish white stripe; lores dark brown; sides of the face yellowish white, marked with dull brown; throat, breast, and underparts generally rich cream-colour, rather tinged with red on the breast, on which are also a few scarcely perceptible light brown spots; beak blackish brown, dull yellowish at the base of the lower mandible; legs yellowish brown; iris dark brown. Total length about 6½ inches, culmen 0·7, wing 3·75, tail 3·2, tarsus 1·0, hind toe with claw 0·7.

Female. Similar to the male.

Obs. As a rule specimens from various localities in Europe, Africa, and Asia agree very closely in plumage and tone of colour. I have two specimens, however, one from Sweden and the other from Sardinia, both shot in April, which have the general colour much whiter on the underparts and greyer on the upper surface of the body than other examples. The spots on the breast are more distinct in some than in others; but I find some eastern examples quite as much marked on the breast as any of those obtained in Europe. The average size of European examples is—culmen 0·68, wing 3·57, tail 2·94, tarsus 1·03, hind toe with claw 0·67; and those from India average—culmen 0·77, wing 3·37, tail 3·02, tarsus 1·03, hind toe with claw 0·61.

The Tawny Pipit has a most extensive range, being met with in Europe from Scandinavia southwards, in Northern Africa, and in Asia eastward to China.

It has been recorded as an occasional straggler to the south coast of England, and appears to have occurred on at least five or six different occasions. It was first added to our British list by Mr. George Dawson Rowley, of Brighton, who (Ibis, 1863, pp. 37, 39) gave full particulars of the capture of two examples of this Pipit, one of which was obtained near Brighton on the 17th of August, 1858, and the other close to Rottingdean, near Brighton, on the 24th of September, 1862. Since then, according to Mr. Harting, five specimens have been recorded as having been obtained, viz.:—one, Brighton, 30th of September, 1864 (*G. Dawson Rowley*, Ibis, 1865, p. 113); one, Scilly, September 1868 (*Hearle Rodd*, Zoologist, 1868, p. 1458); two, Brighton, 6th of September, 1869 (*F. Bond*, Zoologist, 1870, p. 1984); and one, Brighton, autumn 1870 (*Bond*, Zoologist, 1870, p. 2383). To these I may add that Mr. George Dawson Rowley has obtained another specimen at Brighton, which he records in the 'Field' of the 11th of October, 1873.

It has not been recorded from Iceland or the Færoes; but in Scandinavia it occurs not unfrequently in the southern portion of the peninsula, though it has not been met with in Norway. Nilsson writes (Skand. Faun. p. 389) that "it is not uncommon on the sandy heaths and fields in Southern Sweden, and in some localities quite numerous. In Skåne it is found on almost all the heaths both on the coast and in the interior; and I saw it in Halland, Blekinge, and Öland. Wallengren met with it in the southern part of Gottland; but it does not occur in Upper Sweden and Norway. It arrives in May and leaves in September." When in Öland in 1847 Mr. Meves saw this Pipit, and shot a pair at Skanörsljung; but he did not obtain it on his second visit. In Finland, according to Magnus von Wright (Finl. Fogl. p. 151) it has been obtained but once, at St. Michel, in June 1855, by Mr. J. von Wright. Two were seen, but only one was shot. It occurs but rarely in Northern and Central Russia; and Mr. L. Sabanäeff informs me that he believes he saw it in the Government of Jaroslaf, and it occasionally occurs near Moscow during migration. Severtzoff records it as a migrant in the Government of Voronege. I have no information as to its occurrence in the Baltic Provinces; but in Poland it is, as I am informed by Mr. Taczanowski, tolerably numerous, especially in sandy localities, where it is found during the summer in the most open and arid spots, and hides its nest so effectually that it is seldom found. According to Borggreve "it is more common in the eastern than the western portion of North Germany. It is said to be rare in Silesia, Anhalt, Pomerania, Mecklenburg, and Oldenburg, but common in Ober-Lausitz. Rafu met with it breeding on the Island of Sylt. Bolsmann records it as nesting on clayey commons;" and Borggreve himself observed a few pair near Neustadt-Eberswald. Mr. A. von Homeyer writes (J. f. O. 1870, p. 223) that he "found it breeding in small numbers in New Pomerania, Ober-Lausitz, Posen, and Lower Silesia, and found it numerous during the autumn migration in the two last-named localities." According to Von Zittwitz it breeds not uncommonly near Magdeburg. Dr. E. Rey informs me that it arrives in Saxony in April, and breeds in the sterile country between the Dolauer Haide and the village of Granau; he obtained eggs between the 7th of May and the 25th of July, from four to five in a nest. Mr. Carl Sachse, writing to me from Altenkirchen, Rhenish Prussia, says that it does not breed there, but he has shot it at both seasons of migration. He obtained one nest, containing eggs, from Andernach, on the Rhine, taken near there on the 9th of June. Faber (Orn. Not. p. 26) records it as rare in Denmark; and, according to

Kjærbölling (Danm. Fugl. p. 148), Mr. Steenberg possessed a specimen obtained near Helsingöer. It has been recorded (Ibis, 1862, p. 62) from Heligoland; and Von Droste obtained two on Borkum in September. Professor Schlegel states that it breeds in Holland on the dunes near the sea, and arrives at its breeding-haunts in April, leaving again in September. De Selys records its arrival in Belgium in April, and states that it nests in the Ardennes. De la Fontaine adds that it frequents the rough land near woods, especially arid soils. Degland and Gerbe write that it appears irregularly in the north of France in September and March, but is more numerous and resident in Provence from April to September, and is there known by the name of "*Fiste*." Dr. Companyo states that "in the moist plains on the French side of the Eastern Pyrenees this species arrives in April in great numbers, and remains to breed, disappearing in autumn." It has been recorded from Portugal; and Dr. E. Rey states (J. f. O. 1872, p. 152) that on the sterile mountains, west of Villa do Bispo, near the coast, he found it not uncommon. In some parts of Spain it is common; and Mr. Howard Saunders writes (Ibis, 1871, p. 216) that he never observed it in the fertile and well-watered country round Seville; but on the higher tablelands, especially in the more arid districts of the provinces of Murcia and La Mancha, it is very abundant, and breeds.

Passing eastward, again, I find it occurring in Savoy during migration; but, according to Bailly, it is never very abundant, and it is only on the barren and stony soils at the foot of mountains, such as the neighbourhood of Chambéry, that it can be found breeding. In Tuscany, according to Savi, it appears in April, and some few remain to breed in the mountains; the return migration commences in August. Professor Doderlein states that it is tolerably abundant in Sicily on the spring and autumn migrations—in the former frequenting the low-lying meadows, whilst in the latter they prefer the more arid fields and the tablelands of the surrounding hills. The majority of the autumn visitants continue their route to Africa. In spring some remain to nest in the central mountains of the island; and when paired they show strong affection if either meets with an injury from gun or snare.

Mr. C. A. Wright records it (Ibis, 1864, p. 61) as common in Malta "from March to May, and again in the autumn;" but he never observed it during the winter. Lindermayer writes (Vög. Griechenl. p. 79), "it arrives in Rumelia in considerable numbers early in April, and frequents the dry rocky places on the lower spurs of the mountains, where it breeds, and leaves us again in September." Erhardt says that it is found on the Cyclades during the winter; and if this is the case, it is a resident in Greece. Mr. H. Seebohm informs me that "*Anthus campestris* is the only species of this genus which breeds in Greece. *Anthus pratensis*, and probably also *cervinus* and *spinoletta*, spend their winters in that country. *Anthus arboreus* passes through in spring and autumn on its migrations; but *campestris* makes Greece its summer home, arriving early in April, and having eggs in May. This bird frequents the valleys in Greece and Asia Minor. I do not remember seeing it in either country much more than a thousand feet above the level of the sea. It seems to prefer the open plains, and is very common in the almost treeless valley between the Parnassus and Thermopyle. I did not meet with it in the valleys south of the Parnassus; they seem to be too much wooded; they are planted with olive-trees, with vines between, and at a distance look like dense olive-forests. Nevertheless *Anthus campestris* is by no means so exclusively a ground-bird as *pratensis*, and may often be seen perched

on a bunch of heath, or some other conspicuous tuft of herbage, where it may be recognized at once by its monotonous note, which I can best express by the syllables *zer-vee*. This bird is especially common on the undulating prairie country, half rock, half grass, and half heath, between Athens and Marathon; and there is no difficulty in obtaining its eggs in this district. It was too early in the season when I was in this part of Greece; but I have several sittings which were collected in the neighbourhood of Kephissia whilst I was in the Parnassus."

It occurs in Southern Germany; Seidensacher observed it in Styria; and Dr. Anton Fritsch records it (J. f. O. 1871, p. 191) as found in Bohemia, and he met with several pairs breeding near Schlan and Laun. Mr. Lokaj observed it near Rumburg. It appears to be not uncommon, and is said to breed near Constantinople; and Von Nordmann records it as very common in the steppes of Southern Russia.

Mr. Robson has sent specimens from Asia Minor; and Canon Tristram met with it in Palestine, where, he writes (Ibis, 1866, p. 289) it is "found all over the cultivated coast and hill districts, but not in the Jordan valley. It is a permanent resident, and we obtained several nests on the ground on the bare hills in April. It is one of the tamest of birds, and particularly affects the mule-paths, flitting along in front of the traveller and keeping unconcernedly a few yards ahead. In winter a few of them may generally be seen consorting with the more numerous *Galerita cristata*." Mr. Wyatt met with it on the peninsula of Sinai; and Captain Clark-Kennedy informs me that "in the month of April this Pipit was to be seen in great quantities along the shores of the Red Sea all the way from Suez to Mount Sinai. It appeared to prefer localities not more than a few miles distant from the sea, although we met with it far inland and in some numbers near Nŭkl, halfway from Sinai to Jerusalem, and from there to Damascus."

It is common in North-east Africa, and, according to Captain Shelley (B. of Eg. p. 134), "is abundantly distributed throughout Egypt and Nubia. It is an early spring visitant, arriving about the middle of February. It chiefly frequents the confines of the desert, where its plumage harmonizes with the colour of the sand, and renders it difficult to be seen." Captain Clark-Kennedy informs me that he met with it abundantly all the way up the Nile from Cairo into Nubia, and in especial abundance in the sandy desert near Assouan and the pyramids of Abousir and Sakarra. Dr. Th. von Heuglin writes (Orn. N.O.-Afr. p. 325) that it occurs in the autumn in Abyssinia, Senaar, and at Kordofan, and he himself observed it on the lower White Nile and in Southern Arabia. In North-western Africa it is likewise common, and, according to Major Loche, resident, frequenting sandy districts in Algeria, where Mr. Taczanowski also records it as numerous on the elevated plateaux between Constantine and Batna, but never saw it in the Sahara. Mr. J. H. Gurney, jun., however, writes (Ibis, 1871, p. 85) that "in some places the soil of the Sahara is soft and sandy, in others hard and pebbly. The Tawny Pipit affects the former, where there is little or no herbage. It appears to be a very solitary bird, and not common. Its flight is undulating, like that of the Wagtail; and, like the latter, it twitters on the wing." Mr. Osbert Salvin met with it on the plateau of Kef Laks, and numerous about the plains of Djendeli. I possess a specimen from Tangiers; and, according to Hartlaub (Orn. W. Afr. p. 73), it has occurred at Cazamanze. Mr. Sharpe possesses a specimen obtained by the late Mr. Andersson in Damaraland, which is as far south in Africa as I can trace it; but on the eastern side of that continent it has been recorded by Captain Sperling (Ibis, 1868, p. 290) as

occurring at Mozambique, though it is doubtful if the bird obtained by Captain Sperling is really referable to *A. campestris*; for, as inferred by Messrs. Finsch and Hartlaub (Vög. Ost-Afr. p. 275), it is possible that *Anthus raalteni* may have been mistaken by him for the present species.

To the eastward the Tawny Pipit is met with as far as China. De Filippi records it as occurring near Tiflis and the valley of the Lar; and Mr. Blanford has lent me specimens obtained by him in Persia and Baluchistan. Mr. A. O. Hume (Stray Feathers, p. 202) says that he found it "far less common in Sindh than it is throughout the North-west Provinces and the Punjaub. In the bare portions of the country, which in Upper Sindh extend from fifteen to forty miles from the foot of the hills, and throughout the bare hilly region south of the Sehwan Hills on the right bank of the Indus, I altogether missed it; but in the more cultivated lands about Shikarpore, Larkhana, and Mehur, and to the east of the Indus, in Roree, Hyderabad, and Tatta, we met with it, though not in great numbers, and I procured a single specimen close to Kurrachee." Dr. Jerdon (B. of Ind. ii. p. 235), giving its range, says:—"in suitable places throughout India. I have found it most abundant in the Deccan, at Mhow, in Central India, and on the Eastern Ghauts; it is rare in the Carnatic; Blyth has it from Midnapore and the North-west Provinces." Dr. Gustav Radde speaks of it as occurring on the Amoor; but he appears doubtful if the bird he includes under the name of *A. campestris* (Reis. im Süd. v. Ost-Sib. ii. p. 220) is really this species or *A. richardi*. After carefully reading all he says on the subject I feel convinced that he did not get *A. campestris*; but at the same time his measurements do not altogether agree with those of *A. richardi*; and without a critical examination of the specimens obtained by him it is impossible to decide to what species they should be referred. His measurements of eleven specimens, reduced to our English scale, average, tarsus 1·1 inch, hind toe with claw 1·07, hind claw 0·65; whereas the Asiatic specimens of *A. campestris* average, tarsus 1·03 inch, hind toe with claw 0·61, hind claw 0·3—and of *A. richardi*, tarsus 1·21 inch, hind toe with claw 1·12, hind claw 0·75. I may add that some of the specimens of *Anthus richardi* I have examined, obtained in Eastern Asia, have the hind toe and claw rather shorter than average European examples, and I think it therefore probable that Dr. Radde's birds were *A. richardi*. Père David states that the present species occurs at Pekin on passage only, and is abundant in Mongolia; but Mr. Swinhoe does not include it in his list of the birds of China.

The Tawny Pipit usually frequents the open, sandy, and sterile plains; but this is not always the case, as Mr. E. F. von Homeyer expressly remarks on his having repeatedly met with it in Hinter-Pommern (Pomerania) inhabiting fertile ground. In some localities it has been known also to frequent the higher plains and hills; but as a rule this is not the case. Mr. Seebohm informs me that in Greece it appears to confine itself strictly to the valleys and plains. It is a shy uneasy bird, continually on the move, and runs with great celerity, when on the ground resembling a Lark; for, like that bird, it will run for some distance and then stop short, and remain still for a few moments. It carries itself very erect, and when halting has a habit of moving its tail, though very slightly, after the manner of the Wagtails. Though essentially a ground-bird, like our common Lark it is said occasionally to perch on a low bush or a fence; but a clod or a stone is usually chosen for its resting-place. Its flight is swift and strong, bow-shaped, and somewhat resembles that of the Wagtail. Its call-note, Mr. Seebohm informs me, which is constantly uttered, is monotonous, and something resembles the syllables *zer-vee*. Its

song is said to be extremely poor, and is usually uttered whilst the bird is on the wing, fluttering somewhat like a Sky-Lark; but it seldom remains long in the air. It feeds on insects of various kinds, which are usually picked up from the ground; and it but seldom eats seeds. Lindermayer states that it feeds chiefly on neuroptera.

It breeds usually late in May, and places its nest on the ground in any slight depression, or under shelter of a clod, or else amongst brush-scrub or stones. The nest is, according to Mr. O. Salvin, constructed of roots, and lined with horse-hair; but Naumann states that the lining is composed as frequently of fine roots as it is of hair. Mr. Salvin found the nest placed on the lee side of a bush. The number of eggs deposited is usually five or six. Eggs in my collection, obtained in various parts of Southern Europe, are subject to great variation, some being pale blue-grey, slightly marked with umber-brown, whereas others have a brownish grey tinge, and are closely marked with minute reddish brown spots. One variety, obtained in Spain, is almost unspotted at the smaller end, and at the larger end is blotched with very faint purplish brown underlying shell-markings and very distinct dark brown surface-spots. In size they vary from $\frac{31}{40}$ by $\frac{24}{40}$ to $\frac{35}{40}$ by $\frac{26}{40}$ inch.

The specimens figured are from Portugal and Sweden, the former being the one described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Borgholm, June 15th, 1847 (*Meves*). *b*, ♂. Portugal, April (*Dr. E. Rey*). *c*, ♂. Sardinia, April 1870 (*Salvadori*). *d*. Tangiers (*Olcese*). *e*, ♂. Maslak, Turkey, April 26th, 1869 (*Robson*). *f*. Malta, spring, 1861. *g*. Crimea. *h*, ♀. Asia Minor, May 14th, 1861 (*Robson*). *i*. Egypt (*Rogers*). *j*. Egypt (*E. C. Taylor*). *k*. Egypt, April 6th, 1871 (*Shelley*).

E Mus. Lord Walden.

a, *b*. Umballah, India, February (*Dr. Scott*). *c*, *d*. Umballah, October and November (*R. C. Beavan*).

E Mus. Ind. Calc.

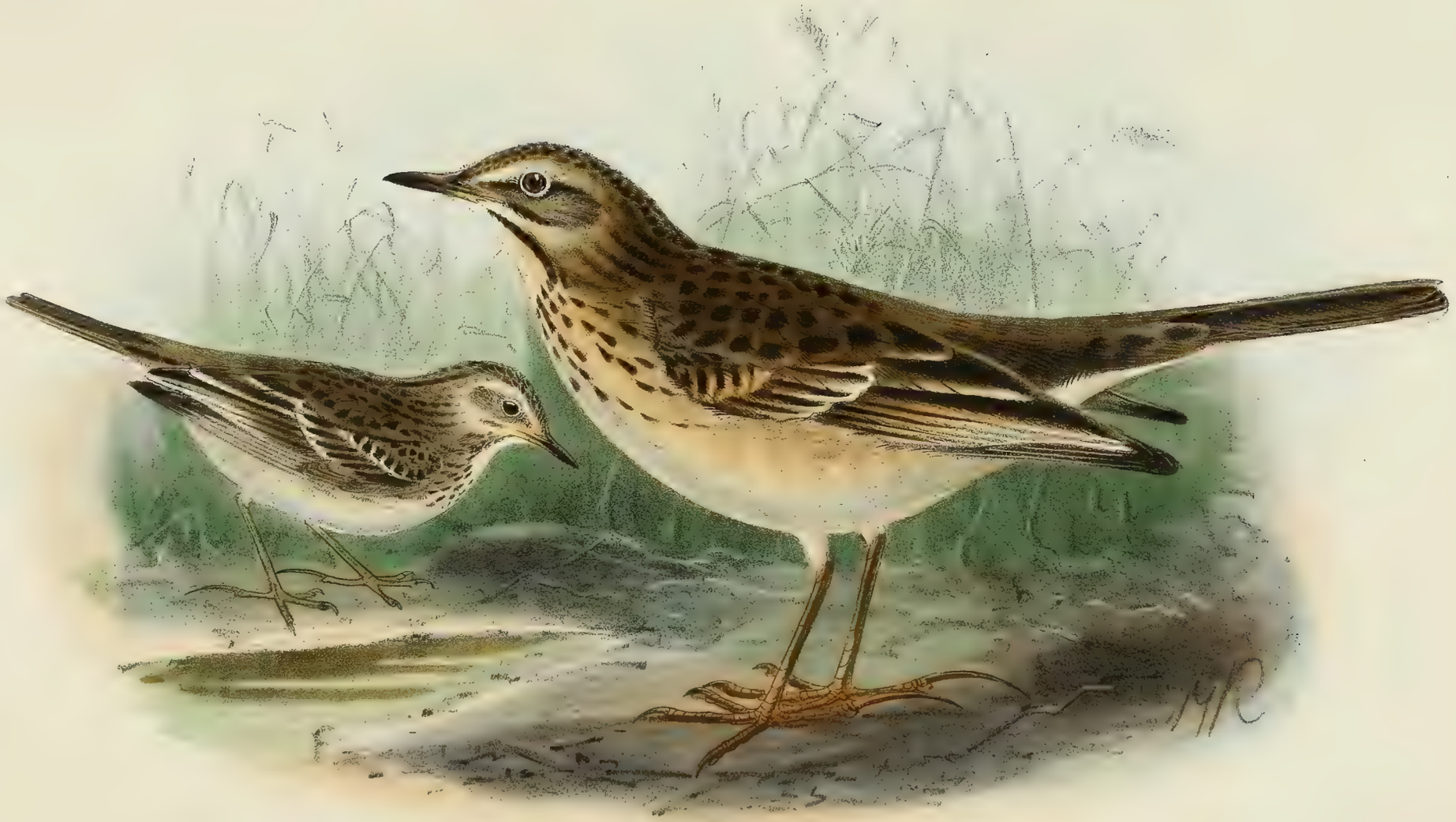
a. Shiraz, December 1870. *b*, ♂. Dizak, Baluchistan, 4000 feet elevation, March 24th, 1872 (*W. T. Blanford*).

E Mus. H. B. Tristram.

a, ♂. Kef-Laks, April 22nd, 1857 (*H. B. T.*).

E Mus. Howard Saunders.

a, *b*. Malaga, September 25th. *c*, *d*, ♂. Malaga, October 12th. *e*, *juv*. Granada, June 28th. *f*. Tangiers, winter. *g*. Palermo, Sicily, autumn. *h*. Algeria, spring. *i*. Egypt (*Rogers*). *j*, ♀. Near Constantinople, June 17th (*Robson*).



RICHARDS PIPIT.

ANTHUS RICHARDI

ANTHUS RICHARDI.

(RICHARD'S PIPIT.)

Anthus richardi, Vieill. Nouv. Dict. xxvi. p. 491 (1818).
Corydalla richardi (Vieill.), Vigors, Zool. Journ. i. p. 411 (1825).
Anthus rupestris, Ménét. Cat. Raisonn. p. 37 (1832, nec Nilss.).
Anthus macronyx, Gloger, Handl. Vög. Eur. i. p. 269 (1834).
Anthus longipes, Holandre, Faune de la Moselle, p. 84 (1836).
Cichlops monticolus, Hodgs. in Gray's Zool. Misc. p. 83 (1844).
Corydalla sinensis, Bp. Consp. Gen. Av. i. p. 247 (1850).
Corydalla orientalis, L. Brehm, Naumannia, 1856, p. 463.
Corydalla russelti, L. Brehm, loc. cit.
Agrodromas richardi (Vieill.), Saunders, Ibis, 1871, p. 216.
Corydalla chinensis, Bp., Swinhoe, P. Z. S. 1871, p. 366.

Stelzenpieper, *Spornpieper*, German; *Pipit Richard*, French; *Bilblun selvag*, Maltese.

Figuræ notabiles.

Temm. Pl. Col. 101; Werner, Atlas, *Insectivores*, pl. 83; Naumann, Vög. Deutschl. pl. 371. figs. 3, 4; Gould, B. of Eur. pl. 135; id. B. of G. B. iii. pl. 8; Roux, Orn. Prov. pls. 189, 190; Bouteille, Orn. du Dauph. pl. 28. fig. 1; Schlegel, Vog. Nederl. pl. 93.

♂ *ad.* corpore suprà saturatè fusco plumis omnibus medialiter nigricantibus: uropygio et supracaudalibus sordidioribus, fuscescentibus, unicoloribus: remigibus nigricantibus, primariis in pogonio externo vix cervino marginatis, secundariis conspicuè rufescente marginatis: tectricibus alarum majoribus albicante apicatis, minoribus nigricantibus rufuscente marginatis et apicatis: rectrice externâ albâ, pogonio interno in dimidio basali centraliter striâ griseâ: rectrice secundâ nigricante, in pogonio externo versus apicem albâ et in pogonio interno albo notatâ, reliquis nigricantibus, centralibus rufescente marginatis: ad basin rostri supra oculum striâ albidâ: facie laterali ochrascenti-brunneâ fulvido notatâ: corpore subtùs albido ochraceo lavato: gutture, pectore et hypochondriis vix rufescente adumbratis: mento albo: gutture lateraliter et pectore nigricante maculatis: rostro et iride fuscis: pedibus pallidè brunneis.

♀ haud a mare distinguenda.

Juv. adulto similis, sed corpore suprà pallidiore, tectricibus alarum et secundariis intimis conspicuè albo marginatis.

Adult Male (near Antwerp, autumn of 1870). Upper parts dark dull reddish brown, each feather with a blackish brown centre; rump and upper tail-coverts duller and more uniform brown in colour; quills blackish brown, primaries narrowly margined on the outer web with pale buff, secondaries more broadly edged with rufous, especially the elongated inner ones; larger wing-coverts tipped with whitish, median

and lesser coverts blackish brown, broadly margined and tipped with rufous; outermost tail-feather on each side pure white, excepting an oblique stripe from the base to nearly the centre of the inner web, which is sooty grey, next in order blackish, with the terminal half of the outer web and the portion of the inner web next to the shaft pure white; remaining rectrices blackish brown, the central feathers margined with rufous; from the base of the beak over the eye a whitish line; sides of the face dull light sandy brown, marked with dark brown; underparts generally white, on the throat, breast, and flanks washed with rufous-buff, the chin, however, being pure white; from the base of the lower mandible on each side runs a line of black spots to the upper part of the breast, which has a band of blackish spots across it; bill and iris brown; legs light brown. Total length about 8 inches, culmen 0·75, wing 3·7, tail 3·25, tarsus 1·2, hind toe with claw 1·25, hind claw 0·78.

Young (near Antwerp, autumn 1870). Resembles the bird last described, but has the upper parts duller and paler, and all the wing-coverts and inner secondaries conspicuously margined with white; the throat and chest are also somewhat more profusely spotted than in the adult.

Obs. Specimens from Europe and Asia differ but very slightly either in colour or measurements; and as regards the latter, the variations in European specimens are as near as possible the same. I have carefully measured a similar number of Asiatic specimens to those I have from Europe, and on taking and comparing the average I find them to agree as nearly as possible. The average size of the whole series of specimens is—culmen 0·765 inch, wing 3·696, tail 3·277, tarsus 1·215, hind toe with claw 1·127; the variation being—culmen 0·7 to 0·82, wing 3·6 to 3·8, tail 3·2 to 3·45, tarsus 1·15 to 1·25, hind toe with claw 0·95 to 1·3. In coloration most of the Asiatic specimens agree precisely with those obtained near Antwerp; but one or two of the former are rather darker and more fulvous than the latter.

This Pipit, most easily distinguishable by its long tarsus and extremely long hind claw, is found in small numbers in most parts of continental Europe, as well as in Great Britain, in Asia, and in North-east Africa, but is rare in the last-named country.

In Great Britain it has occurred as frequently, if not more so than in any part of Northern or Central Europe; and Mr. Harting states that as many as fifty specimens have been at various times seen or procured between September and April, both inclusive. These recorded occurrences he tabulates as follows:—Northumberland two, Norfolk five, Shropshire one, Oxford one, Middlesex twelve, Kent three, Sussex five, Devonshire eleven, Cornwall and Scilly eight. Some of these may, on strict investigation, prove to rest on somewhat doubtful grounds; but there is no doubt that this Pipit has been met with tolerably often as a straggler to our island. Mr. Cecil Smith informs me that he does not believe it has been yet found in Somersetshire, though, as above stated, it has occurred several times in Devonshire. Mr. J. Gatcombe, in a letter just received, says that "within the past thirty years I have known eight examples of this bird to occur in the neighbourhood of Plymouth. Indeed I was the first to recognize the species in Devonshire, and that, too, when it was on the wing, flying over some fields in company with Titlarks. The bird was then followed up by my friend the Rev. G. Robinson, who, after a long chase, succeeded in shooting it. Another friend, Mr. J. Dodd, of Plymouth, who had a capital ear for the notes of birds, first heard it, and exclaimed 'there's a stranger,' but neither he nor Mr. Robinson had the least idea what the bird was until I told them; and my words soon proved to be correct. There appeared to have been a small party of them, as the next day my friend

Robinson killed another, and two more were shot by myself and brother, all within the distance of a few fields from each other. From what I observed of their habits, I found that they almost invariably alighted in fields in which cows were feeding, ignoring others in their way, and were constantly running or flitting from one cow-dab to another, actively pursuing flies and small coleopterous insects flying near. Their flight was undulating, much like that of the Wagtail; and their rather loud call-note, often uttered when moving from one place to another, much resembled (to my ear) something between those of the Pied Wagtail and Sky-Lark. Six of these birds were obtained at the beginning of winter; but Mr. Dodd and I came across a pair rather late in spring, one bird of which he killed."

It has been met with as far north as Fredrikshald, in Norway, where, according to Mr. R. Collett (J. f. O. 1869, p. 393), a single specimen was obtained in August 1843; and Professor Sundevall writes (Sv. Fogl. p. 42) that "a young male was taken alive on a steamer in Calmar Sound, in Sweden, during a fog, on the 18th of October, 1856." My Russian correspondents do not refer to it as having occurred in either the northern or central portion of that country; nor has it been recorded from Finland; but Borggreve states (J. f. O. 1871, p. 212) that, according to Blasius, small flocks are from time to time met with on the coasts of the North Sea during autumn and winter; and, according to Herr Maas (J. f. O. 1862, p. 450), it is said to be tolerably common in Heligoland. Von Droste Hülshoff records it from the island of Borkum, where, he states (J. f. O. 1868, p. 406), many specimens were observed and killed in 1867 and 1868; and he says that altogether twenty-seven were met with there in the months of September, October, and December. Professor Schlegel (Vog. Nederl. p. 177) records it as found in Holland, where, he writes, it breeds on the dunes and heaths bordering the sea-coast, but he does not give any specific information as to its nidification; and I have specimens obtained near Antwerp in 1870. Degland states that it occurs every autumn in the neighbourhood of Lille; specimens are also to be found in the Paris markets amongst the bunches of Larks from Picardy; and examples have been obtained near Bergues and Dunkirk; also one specimen is recorded from Metz. In Provence, according to Jaubert and Barthélemy-Lapommeraye, it is also found on the spring as well as on the autumn migration; but the statements (originating with Mr. P. Roux) of its nesting in that province require further confirmation. It occurs in Spain; and Major Irby, who sent me a carbolized specimen from Gibraltar, informs me that he only met with it there from the 1st of March to the 20th of April, and it appeared to be rare. Mr. Howard Saunders, however, writes (Ibis, 1871, p. 216) as follows:—"I possess two fine examples, which were obtained near Malaga on the 2nd of February. In some winters the species is not uncommon."

In Italy, according to Salvadori, it has occurred at irregular intervals in almost every province; and Doderlein states that specimens have been obtained near Palermo, but that it is certainly rare in Sicily, and has not yet been met with in Sardinia.

It has occurred in Malta, where Mr. C. A. Wright records it (Ibis, 1864, p. 61) as "accidental. In the spring of 1853 I was so lucky as to shoot one of two which appeared on Fort-Manoel Island. My attention was attracted by its exceedingly sharp and powerful note. Another is recorded as having been taken in October."

Both Von der Mühle and Erhardt state that it occurs in Greece during the summer, and breeds there, being found in the Morea, but not in Rumelia; but Lindermayer never observed

it, and appears to doubt the above statement that it breeds in Greece, as he observes that there is no instance of its nest having been taken in that country.

It has occurred in South Germany, as there is a specimen in the Vienna Museum which was caught near that city; and it has likewise been met with in Southern Russia. Professor von Nordmann writes that he obtained specimens in all stages of plumage near Odessa, and he is therefore inclined to believe that it breeds in New Russia.

Dr. Th. Krüper, in a letter from Smyrna, writes respecting this Pipit, "it not unfrequently pays us a passing visit here in April, and some few nest here." Von Heuglin does not include it in his work on the ornithology of North-east Africa; but Dr. Brehm (J. f. O. 1855, p. 366) says that it sometimes occurs in East Africa; and Zander (J. f. O. 1853, Extrah. p. 61) gives North Africa as one of the countries where it has been met with. According to Loche it has been met with, but is very rare, in Algeria, and there is a specimen in the Museum at Algiers obtained near Harrach.

In Asia it is met with as far east as China and Siam. In India it is tolerably common during the winter; and Dr. Jerdon writes (B. of Ind. ii. p. 232):—"occurs throughout the greater part of India, but only found in the cold weather, up to about the end of April. It is found from Nepal and the Himalayas to the extreme south; more rare in Southern India, especially in the Carnatic, but tolerably common, indeed abundant, in Lower Bengal. It is also found in Ceylon, in Burmah, and other countries to the eastward. It always affects swampy or wet ground, grassy beds of rivers, edges of tanks, and especially wet rice-fields, either singly or in small parties. Its flight is strong, elegant, and undulating; and it flies some distance in general before it alights again." Mr. Blanford met with it at Bassein, in the Irawadi valley; Sir R. H. Schomburgk obtained it in Siam; and I have before me a specimen, from the collection of Lord Walden, obtained at Camboja. In China it appears to be by no means uncommon. Mr. R. Swinhoe informs me that it "is found throughout the winter in South China, being most common on the dry uncultivated hills, where, when disturbed, it rises with a loud *chay*, which it repeats at nearly every rise in its undulating flight. Specimens I have obtained vary much in size and fulvescence, for which I have accounted by the supposition that they come on their migration southwards from different geographical areas. Some remain during the summer at Amoy; but I believe the darkest race (*A. sinensis*, Bp.) resorts at that season to the neighbouring hills, where it breeds. I have found a very similar, but lighter, race on the hills at Foochow, further north, in July, but have not had the gratification of finding its nest." This gentleman also states (Ibis, 1863, p. 311) that it is a very rare straggler to Formosa.

Dr. Dybowski writes (J. f. O. 1868, p. 334) that it is common in Dauria, and remains there to breed; but he gives no information as to its habits or nidification, excepting that he found its nest, and that it deposits five or six eggs. Dr. G. Radde records, under the name of *A. campestris* (Reis. im Süd. v. O.Sib. p. 222), a Pipit which, I think, may probably prove to be the present species; but without having examined his specimens it is impossible to state that this is the case. He speaks of it as being not uncommon in the stony elevated steppes of East Siberia, frequenting the damp meadows, especially near conifer-growth. It arrived at the Tarei-nor on the 9th May, 1856.

It is curious that, although this bird has been so frequently met with in various parts of

Europe, and must breed there (for I have before me European-killed specimens in young plumage), there does not appear to be any reliable instance on record of its nest having ever been taken in Europe; and, in fact, next to nothing is known respecting its nidification. I have a clutch of five eggs, collected by Dr. Dybowski at Darasun, in Dauria; but they were sent to me without the nest, which I am therefore unable to describe. Nor is much known respecting the habits of Richard's Pipit, which in general appear to resemble those of the Tawny Pipit (*Anthus campestris*); all the little information I can collect on this head is given above.

The eggs of this Pipit differ greatly from those of *Anthus campestris*, being dull greenish grey, very closely spotted with dull brown. Out of five I possess, all collected in Dauria by Dr. Dybowski, three are brownish in shade, and two greenish brown. In general character they somewhat resemble eggs of *Otocoris alpestris*; but the spots are a trifle bolder and are distributed generally over the surface of the egg, never collected towards the larger end. In size they vary from $\frac{35}{40}$ by $\frac{25}{40}$ inch to $\frac{36}{40}$ by $\frac{27}{40}$ inch.

The specimens figured are an adult and an immature specimen, both obtained near Antwerp, these being the specimens described, both being in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, c, d, ad., e, juv. Antwerp, autumn 1870 (*Krüger*). *f*, ♀, *g*. Amoy, March 1861 (*R. Swinhoe*). *h*. Amoy, November 1866 (*H. S.*). *i*, ♂. Amoy, February 18th, 1872 (*Captain Conrad*). *k*, ♂. Lake Baikal, Siberia (*Dr. Dybowski*).

E Mus. Lord Walden.

a, b, c, d. India. *e*. Ceylon. *f*. Camboja. *g*. Amoy, March 1861 (*R. Swinhoe*).

E Mus. H. B. Tristram.

a. Amoy, November 1859. *b*. Amoy, January 1860. *c*. Amoy, March 1861 (*R. Swinhoe*). *d*. Geneva, February 1845 (*C. Harford*).



Hanhart imp

PENNSYLVANIAN PIPIT.
ANTHUS LUDOVICIANUS.

ANTHUS LUDOVICIANUS.

(PENNSYLVANIAN PIPIT.)

Alauda pensilvanica, Briss. Orn. App. p. 94. no. 13 (1760).
La Farlouzanne, Montb. Hist. Nat. Ois. v. p. 38 (1778).
L'Alouette aux joues brunes de Pensilvanie, Montb. tom. cit. p. 58 (1778).
Alauda ludoviciana, Gmel. Syst. Nat. i. p. 793 (1788).
Alauda rubra, Gmel. tom. cit. p. 794 (1788).
Alauda pennsylvanica, Bonn. Tabl. Encycl. & Méthod. i. p. 319 (1790).
Motacilla hudsonica, Lath. Ind. Orn. ii. p. 503 (1790).
The Lark from Pensilvania, Edw. Gleanings, vi. p. 185, pl. 297 (1806).
Anthus rubens, Merrem in Ersch & Grub. Enc. iv. p. 290 (1820).
Anthus ludovicianus (Gm.), Licht. Verz. Doubl. p. 37 (1823).
Alauda rufa, Wils. Am. Orn. ii. p. 313, pl. 42. fig. 4 (1828, nec Gm.).
Anthus spinoletta, Bp. Syn. p. 90 (1828, nec Linn.).
Anthus aquaticus, Swainson, Faun. Bor.-Am. ii. p. 23 (1831, nec Bechst.).
Anthus pipiens, Aud. Orn. Biog. i. p. 408, pl. 80 (1832).
Anthus pratensis japonicus, Temm. & Schl. Fauna Japonica, p. 59, pl. 24 (1850).
Anthus reinhardtii, Holb. Fauna Grönl. p. 25 (1854).
Anthus pennsylvanicus (Bonn.), Zander, Naumannia, 1854, p. 13.
Anthus hypogæus, Bp. Compt. Rend. xxxviii. p. 65, footnote (1854).
Anthus japonicus, Swinh. Ibis, 1861, p. 333.

Figuræ notabiles.

Aud. *l. c.*; id. B. Am. iii. pl. 50; Wils. Am. Orn. pl. 42. fig. 4.

Ad. suprà viridi-olivaceus, pileo et dorso indistinctè nigro-fusco notatis: remigibus saturatè fuscis, primariis angustè, secundariis conspicuè cervino marginatis: tectricibus alarum griseo-cervino marginatis: rectricibus centralibus fusco-olivaceis, reliquis nigro-fuscis, rectrice extimâ utrinque in dimidio apicali obliquè albis, rectrice secundâ apice albo notatâ: corpore subtùs cervino, gutture imo conspicue nigro-fusco notato, hypochondriis fusco striatis: striâ superciliari cervinâ: rostro, pedibus et iride fuscis.

Adult Male (San Antonio, 10th January). Crown, nape, back, and rump greenish olivaceous, the crown and back with faint blackish spots here and there; quills dark brown, the primaries with narrow, the secondaries with broad buffy grey margins; wing-coverts broadly margined with greyish buff; central rectrices like the back, but darker, the remainder blackish, the outer feather on each side with the terminal half obliquely white, the next with a long, white terminal spot; underparts honey-buff, the chin rather paler; lower throat and breast boldly spotted and blotched with dark brown, and the flanks slightly striped with the same colour; streak over the eye pale buff; bill and legs dark brown; iris dark brown. Total length about 6·5 inches, culmen 0·5, wing 3·3, tail 2·7, tarsus 0·9, hind toe

with claw 0·72; the first three quills of almost equal length, the fourth rather shorter, the fifth 0·4 shorter than the fourth, the elongated inner secondaries 0·2 longer than the fifth quill.

The present species is only known as a rare straggler from the Nearctic Region, where it is a common bird. It has been said to have occurred in Great Britain, but, I believe, on insufficient grounds; for, so far as I can judge, all the instances on record of the supposed occurrence of this bird refer to the various form of the Rock-Pipit. It has, however, certainly occurred in Heligoland; for Mr. Seebohm has compared the two specimens in the well-known collection of Mr. Gätke with the one I have figured, and pronounced them to be specifically identical. Beyond these two, however, I cannot find any undoubted instances of its occurrence in Europe. It is somewhat remarkable that it is found in Eastern Asia, and has hitherto escaped notice. Some time ago, when I wrote the article on *Anthus cervinus*, I was assured by Mr. Swinhoe that *Anthus japonicus* was certainly a distinct species, and was not, as was supposed by many authors, specifically identical with *Anthus pratensis* or *Anthus cervinus*; but I had not then had an opportunity of comparing specimens and of judging for myself. Mr. Seebohm, however, has lately compared examples from Japan, and has asked me to verify the result of his comparison; and there can be no doubt that they are true *Anthus ludovicianus*. He has examples both from China and Japan, and also from the island of Urup, which is, I believe, off the coast of Kamtchatka. In America the present species is very generally distributed down into Central America, being common in many localities; and it inhabits Greenland, where, Professor Newton says, "it is supposed to breed not further south than 67° N. lat." It is common in the northern portions of British North America in summer, and breeds numerously in Labrador. At the approach of winter it migrates southward, some wintering in the Middle United States, and others pushing on to Texas and Mexico. I found it numerous in New Brunswick in the spring and autumn; but I am unaware if it breeds there. Messrs. Baird, Brewer, and Ridgway state (N. Am. Birds, i. p. 171) that "at different seasons of the year the Brown Titlark is found throughout the continent, and abundant for the time in the several parts of the country, chiefly frequenting the least-cultivated portions, and apparently preferring the sterile and least-attractive regions. It is one of the most extensively distributed of all our North-American birds, being found in immense numbers over the whole length and breadth of North America. Gambel met with them in large numbers in New Mexico and California; Richardson found them on the plains of the Saskatchewan; it is abundant in the Arctic regions from May to October, and is equally common on the coast of Labrador; Mr. Dall found it universal from British Columbia north. It is also found in Florida, Cape St. Lucas, Mexico, and Central America." To this I may add that I found it common in Texas in December and January; and Mr. Salvin saw a flock near Dueñas, in Central America, on passage, in February.

I cannot say much respecting the habits of this bird from personal observation, having only seen it in New Brunswick, when it reminded me greatly of our common Meadow-Pipit. I used generally to find it on or near the salt marshes of the Musquash; and when disturbed it would fly up with the same jerky flight as, and uttering a note like, our Titlark. Messrs. Baird, Brewer, and Ridgway say (*l. c.*) that it is "a bird of easy and beautiful flight, passing and repassing through the air with graceful evolutions, and, when moving to new localities, sweeping over the place several times before alighting. It also moves rapidly on the ground, and after the manner

of the true Larks, jerking the tail like our Water-Thrushes and the European Wagtails. When feeding on the open ground in the interior, their food is chiefly insects and small seeds. On the banks of rivers and on the sea-shore they are fond of running along the edge of the water, searching among the drift for insects, small shells, and crustaceans. Near New Orleans and Charleston, in the winter, Mr. Audubon found them feeding, in company with the Turkey-Buzzard, upon garbage."

The Pennsylvanian Pipit breeds in the more boreal portions of North America and in Labrador; and, according to Mr. Allen, it certainly breeds in the mountains of Colorado, within the limits of the United States; for he found young birds, scarcely able to fly, in July, on Mount Lincoln, Park County, Colorado. Audubon gives particulars of its nidification in Labrador; and Dr. E. Coues, who likewise found it breeding there, writes (B. of N. W. p. 41) as follows:—"It was there the most numerous of the land birds, excepting perhaps the White-crowned Sparrow, frequenting open, bare and exposed localities, often on the rocky and barren islands almost untenanted by other species. Here, as elsewhere in maritime localities, the birds are fond of resorting to the sea-shore at low tide, there to ramble in quest of food on the mud and sea-wrack in company with Sandpipers, and not distantly resembling these birds in their manners. Two nests I obtained in July were both placed in a cavity in the ground, about as large as a child's head, on the side of a steep rocky chasm. A flooring of dried grass had been introduced to keep the nest from the wet; the nests were built upon this, of coarse dried grass loosely arranged and without lining; the exterior diameter was about six inches, the interior three inches, with a depth of two inches. One nest contained five, the other four eggs, averaging thirteen sixteenths of an inch long, by nine and one half sixteenths broad; of a dark chocolate-colour, indistinctly marked with numerous small spots and streaks of blackish. The parents do not leave the nest until nearly trodden on; then the one that is incubating flutters up with loud cries of distress that soon bring the mate, and the pair hover anxiously over head, at times approaching within a few feet, or even alighting close by, all the while crying out in the most beseeching and plaintive manner. I saw no attempt to deceive by feigning lameness; but the birds often follow any one who has disturbed them for some distance. On such occasions several pairs nesting near each other, are often aroused, and join their cries with those of the afflicted parents."

I possess a series of the eggs of this species from Labrador, which are generally more reddish in tinge than those of our Rock-Pipit, though some are but slightly different from typical eggs of that species, which they resemble in size, but are, as a rule, a trifle smaller. One rather aberrant variety is dull greenish grey, with such indistinct spots as to appear almost uniform in colour.

The specimen figured is an adult male shot by myself in Texas in January.

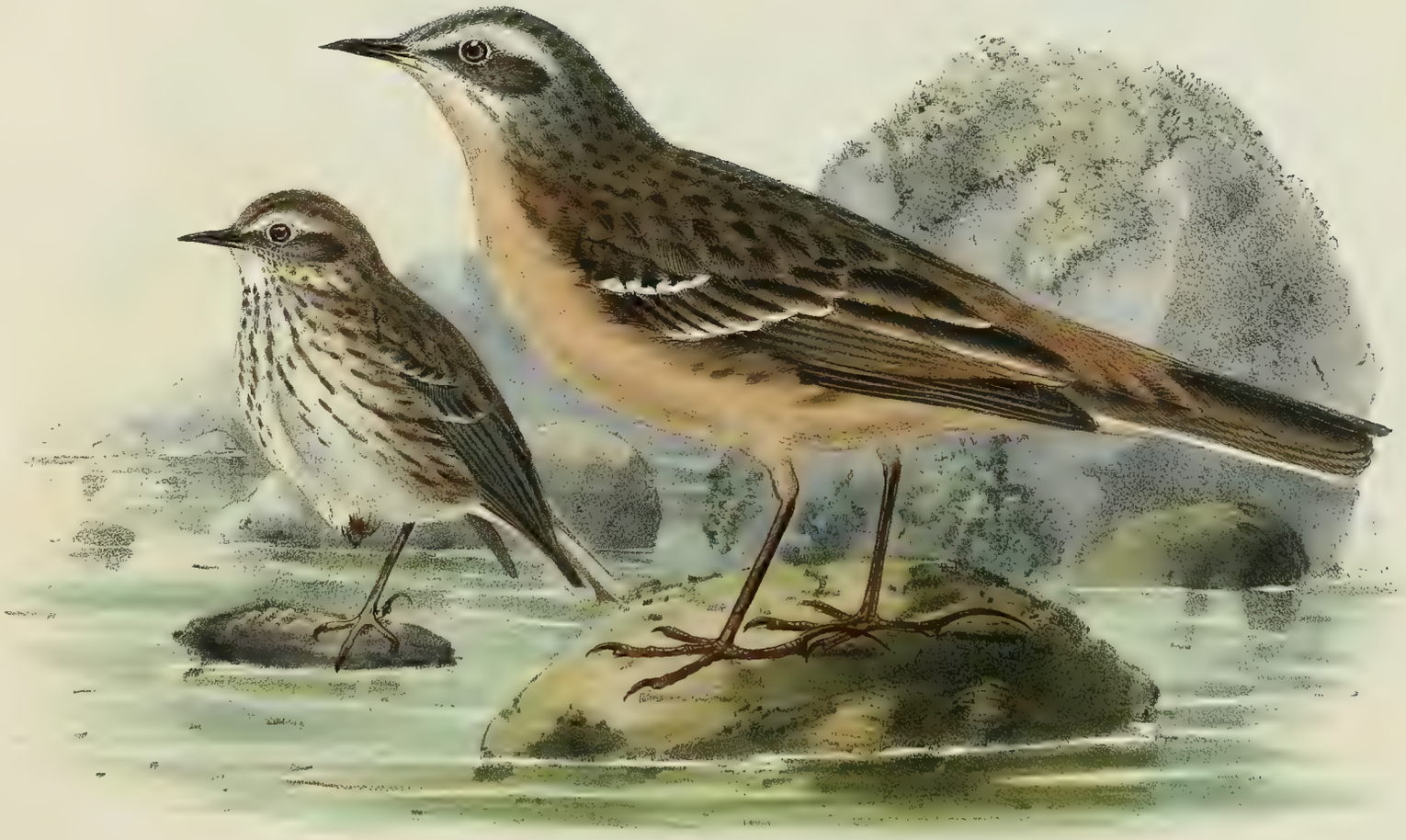
In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Labrador, spring (*Möschler*). *b*, *c*. Pennsylvania. *d* ♂. San Antonio, Texas, January 10th, 1864 (*H. E. D.*).

E Mus. H. Seebohm.

a, ♂. Ningpo, China, January 27th, 1873. *b*, ♀. Ningpo, December 31st, 1871 (*R. Swinhoe*). *c*. Japan (*Blakiston*). *d*, *e*. Island of Urup, N.E. Asia (*Wosnessensky*). *f*, ♂. Pennsylvania, October 12th, 1876 (*Schlüter*). *g*, ♂. Newark, New Jersey, March 1872.



WATER PIPIT.

ANTHUS SPINOLETTA

182

ANTHUS SPINOLETTA.

(WATER-PIPIT.)

Alauda spinoletta, Linn. Syst. Nat. i. p. 288. no. 7, "Italy" (1766).
Alauda spinoletta, L., Scopoli, Ann. I. Hist. Nat. p. 218. no. 186 (1769).
Alouette pipi, Montbeill. Ois. v. p. 326; Pl. Enl. 661. fig. 2 (1778).
Alauda campestris spinoletta β, Gm. Syst. Nat. i. p. 794, "Carniola, Italy, Sardinia, Russia" (1788).
Alauda pratensis γ. *pedibus atris*, Gm. tom. cit. p. 792 (1788).
Anthus aquaticus, Bechst. Orn. Taschenb. iii. p. 564, "Russia, Italy, England, Germany" (1812).
Anthus montanus, Koch, Baier. Zool. i. p. 179, "Alps," *ptil. æst.* (1816).
Anthus coutellii, Aud. Descr. de l'Egyp. p. 281, pl. 5. fig. 5, "Egypt" (1825).
Anthus aquaticus s. *coutellii*, Aud., Ehrenb. Symb. Phys. fol. *dd*, "N. Arabia" (1829).
Anthus nigripes, Ehr. nom. MS. Mus. Berol.
Anthus aquaticus, Bechst., Savi, Orn. Tosc. ii. p. 39, "Tuscany" (1829).
Anthus hiemalis, C. L. Brehm, Vög. Deutschl. p. 329, "Westphalia, S. France" (1831).
Anthus alpinus, C. L. Brehm, loc. cit., "Tyrol and Kärnthen" (1831).
Anthus spinoletta (L), Bp. Comp. List B. of Eur. & Am. p. 18. no. 151, "Europe" (1838).
Anthus orientalis, C. L. Brehm, Vögelf. p. 138, "Asia, E. Europe" (1855).
Anthus major, L. Brehm, Naumannia, 1855, p. 279.
Anthus apinus, L. Brehm, ut suprà (*laps. cal.*).
Anthus hiemalis, L. Brehm, ut suprà.
Anthus minor, L. Brehm, ut suprà.
Anthus blakistoni, Swinhoe, P. Z. S. 1863, p. 90, "Yangtsze river," *ptil. hiem.*

Pipi spioncelle, *Farlouse spioncelle*, *Pipi spipolette*, French; *Spioncello*, Italian; *Wasserpieper*, German; *Siwerniak*, Polish.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 661. fig. 2; Werner, Atlas, *Insectivores*, pl. 84; Gould, B. of Eur. p. 138; id. B. of G. Brit. iii. pl. xi. (figure to the right); Naumann, Vög. Deutschl. pl. 85. figs. 2–4; Fritsch, Vög. Eur. taf. 16. fig. 2; Savigny & Aud. *l. c.*

♂ *ad. æst.* corpore suprà olivascenti-brunneo: pileo et nuchâ cinereo lavatis: uropygio magis olivaceo adumbrato: remigibus nigricanti-brunneis, primariis in pogonio externo vix albicante cervino marginatis, secundariis in pogonio externo conspicuè olivaceo marginatis: tectricibus alarum brunnescente albido terminatis: rectricibus saturatè brunneis, rectrice extimâ versus apicem obliquè albâ et in pogonio externo fere ad basin albâ: lineâ superciliari ochrascenti-cervinâ: loris et facie laterali grisescenti-olivaceis: mento albicante: gutture et corpore subtùs pallidè rufescentibus vix rosaceo adumbratis:

abdomine centrali et subcaudalibus albicantibus cervino lavatis: subtectricibus alarum grisescenti-albidis: rostro et pedibus saturatè brunneis: iride brunneâ.

♀ *ad.* haud a mari distinguenda.

♂ *ad. hiem.* corpore suprà olivascenti-brunnèo: subtùs albus: pectore, gutture laterali et hypochondriis brunneo maculatis: caudâ et alis intùs ut in ptilosi æstivâ picturatis.

Adult Male in breeding-plumage (Southern France, June). Upper parts dull olive-brown on the head and nape, washed with dark ashy grey; rump more olive in tinge than the rest of the upper parts; wings dark brown, the primaries narrowly edged on the outer web, and the wing-coverts broadly terminated with dirty buffy white; secondaries, especially the elongated inner ones, broadly margined on the outer webb with dull olive; tail dark brown, the outer rectrix on each side, with the terminal third, obliquely white, this colour on the outer web reaching nearly to the basal third, and on the inner web narrowing from near the tip almost to the centre of the feather; a tolerably broad superciliary line from the base of the bill above the lores, passing above and behind the eye, pale yellowish buff; lores and sides of the face dull greyish olive; chin pale buffy white; throat, breast, and underparts generally, pale rosy ferruginous, fading into dull white, washed with pale ferruginous on the centre of the abdomen and the under tail-coverts; under wing-coverts greyish white; beak and legs blackish brown; iris dark brown. Total length about 6 inches, culmen 0·7, wing 3·55, tail 2·8, tarsus 1·0.

Female. Similar to the male in plumage.

Adult Male in winter (Macedonia, 9th November). Upper parts as in the summer-plumage, but lacking the grey tinge on the crown and nape; underparts white, on the breast, sides of the neck, and flanks marked with blurred spots and dashes dull brown in colour.

Obs. In the series I have before me I find that there is considerable variation in the purity of the colour of the underparts in the summer-plumage; for in some it has a dull rusty shade, and in others the colour is more rosy and purer. In order to show the variation in size of specimens from various localities I give the following Table:—

	Culmen. inch.	Wing. inches.	Tail. inches.	Tarsus. inch.
England (Brighton)	0·68	3·28	2·55	1·0
Holland	0·7	3·55	2·75	1·0
Posen	0·7	3·48	2·6	1·0
Switzerland	0·68	3·6	2·75	1·0
France	0·7	3·55	2·8	1·0
Greece	0·7	3·55	2·85	1·0
Turkey	0·7	3·5	2·61	1·0
Jericho	0·66	3·30	2·51	1·0
Piedmont	0·69	3·30	2·71	1·0
Algeria	0·69	3·30	2·63	1·0
Persia	0·65–0·7	3·4 –3·5	2·62–2·8	0·93–1·0
Baluchistan	0·65–0·7	3·3 –3·55	2·7 –2·85	0·93–1·0
N.W. India (*A. neglectus*)	0·6	3·05–3·18	2·3 –2·45	0·9 –0·94

The Water-Pipit inhabits Central Europe and Northern Africa, being met with to the eastward through Persia and India to China, South-eastern Siberia, and the Kurile Islands.

There is no doubt as to its having occurred on several occasions in Great Britain; but most of the recorded occurrences require careful verification, as the Scandinavian form of the Rock-Pipit (*A. rupestris*, Nils.), which in the spring-plumage has the breast washed with pale rosy vinous, has been repeatedly mistaken for it. During a recent visit to Brighton I examined several so-called Water-Pipits in the possession of Mr. Swaysland and Mr. Booth; and Mr. Dawson Rowley has sent his entire series of Pipits to me for examination. Amongst all these I find but one true Water-Pipit, all the rest being referable to the Scandinavian Rock-Pipit. I took with me specimens of *Anthus spinoletta* in various stages of plumage, and on showing these to Mr. Swaysland he assured me that he had never had an example of this species through his hands. Mr. Gould figures in his 'Birds of Great Britain' a Water-Pipit obtained at Worthing in 1865, which, judging from the plate, is really the present species; and Mr. Pratt, who sent this and another specimen to Mr. Gould, told me that they had the underparts unspotted, and the oblique band on the outer tail-feathers pure white, which agrees with *A. spinoletta*. In the background of Mr. Gould's plate there is, however, a bird figured which to me appears undoubtedly to be *A. rupestris*, and not *A. spinoletta*.

In many of the occurrences of the present species recorded in the 'Zoologist' and other publications, the particulars given are not sufficient to enable me to decide whether the bird referred to is really *A. spinoletta*; but Professor Newton, who is now preparing his article on the Pipits for the new edition of 'Yarrell's British Birds' which he is editing, will carefully collect all available information as to how often the present species has really been met with in Great Britain, and I cannot leave the matter in better hands than his. I have lately been collecting information respecting the reputed occurrences of *Anthus ludovicianus* in Great Britain; and, so far as I can at present judge, I am inclined to believe that most if not all the recorded occurrences of that species will be found to refer to *Anthus rupestris* or the present species, and not to the true Pennsylvanian Pipit of North America. A curious mistake has occurred in the 'Fauna Boreali-Americana' which has tended not a little to increase the confusion amongst the various species of Pipits. The bird described is certainly, so far as I can judge, the American species; but the specimen figured is undoubtedly a European Water-Pipit; and I can only explain matters by supposing that the specimen actually obtained on the Saskatchewan got exchanged for a bird of the present species after the collection was forwarded to England. Macgillivray (Man. Brit. B. i. pp. 169–171) states that he compared the specimen in the Edinburgh Museum, marked as having been obtained by Dr. Richardson on the Saskatchewan, with examples of a Pipit which he (Macgillivray) identifies with the present species, and that the Saskatchewan bird had more *red* on the breast, which agrees with the plate in the Faun.-Bor. Am., but shows that it could scarcely be a Pennsylvanian Pipit, as this latter species has the underparts yellowish buff, and not red. At the same time I feel sure that the birds described by Macgillivray as *Anthus spinoletta* were not that species, but the Scandinavian form of the Rock-Pipit, as in his description, which, as usual, is most careful, he states that the outer tail-feather has the oblique band *greyish* white, whereas in the present species it is always pure white, and forms a distinguishing character by which it may, in all plumages, be known from the Rock-Pipit, which latter has the band on the outer tail-feathers as described by Macgillivray, greyish white.

Excepting the autumn-plumaged specimen of the present species in the collection of Mr. G.

Dawson Rowley, I have not been able to examine a single British-killed Water-Pipit. The specimen figured by Mr. Gould is now in the collection of the Bishop of Winchester; and I have not had an opportunity of examining it.

It is said by Thompson and Canon Tristram to have occurred in Ireland; but I am doubtful as to whether the bird found there is really *A. spinoletta*, and think that it may prove to be *A. rupestris*.

The present species, so far as I can ascertain, has not been met with in Sweden or Norway; and records of its occurrence there must be taken to refer to *Anthus rupestris*. I know from experience how prone an unpractised eye is to make a mistake in these Pipits; for the first specimens of *A. rupestris* which I received from Norway, being in full spring-plumage, with the breast faintly washed with red, were mistaken by me for examples of the Water-Pipit; and upon my identification of these specimens my friend Mr. Collett included the present species in the avifauna of Norway. One of these specimens I yet have; and the grey band on the outer tail-feather clearly shows it to be a Rock-Pipit. I do not find it recorded as having been met with in Finland; and regarding its occurrence in Russia, Mr. L. Sabanäeff writes that he doubts if it occurs in Central Russia, but, according to Daniloff, it breeds in the Government of Orloff; he (Sabanäeff) met with it commonly in July and August in the Pavdinska Dacha in the Ural, and likewise observed it singly in the southern portions of the Ekaterinburg and Shadrinsk districts. It probably breeds, he thinks, in the Kaslinsky and Keshtemsky Ural. Hoffmann met with it in 61° and 63¾° N. lat.; and Eversmann states that it occurs on the southern slopes of the Ural and in the Kirghis steppes.

In Poland it is, Mr. Taczanowski informs me, "found during migration, but is rare, though in the mountains of Galicia, where it breeds and remains during the entire summer, it is numerous." It occurs in Northern Germany. Boeck does not appear to have obtained it in Prussia; but Borggreve states that it is found during the summer in the low wood-growth in the Riesen-Gebirge, and occurs on the coast as well as near the inland streams and sheets of water, more especially in the mountains, being also seen in the winter on passage. Mr. C. Sachse informs me that he has only observed it twice near Altenkirchen, in Rhenish Prussia, during the winter season, when, the ground being covered with snow, it was seen in the ditches near running water. According to Kjærbölling (Danm. Fugl. p. 144) it occurs in Denmark during migration, and he himself shot examples both in the spring and the autumn in South-east Jutland, but he is unaware as to whether it breeds in that country. Baron De Selys-Longchamps writes that it remains in Belgium throughout the winter season, arriving in October and leaving in March; and I have a specimen in full winter-plumage obtained near Leiden, in Holland. It occurs in Lorraine; and Degland and Gerbe (Orn. Eur. i. p. 371) record it as occurring in France during the spring and autumn migrations, and as inhabiting the mountains of Eastern and Southern France in the spring and summer. Jaubert and Barthélemy-Lapommeraye also speak of it as found in Southern France in the spring and autumn on its way to and from the Basses-Alps, where it breeds. Professor Barboza du Bocage includes it in his list of Portuguese birds as "rare," giving no further particulars; and both Major Irby and Mr. Howard Saunders record it from Spain. The former states (Ibis, 1872, p. 201) that he met with it "in the breeding-season on the high bare ground of the Sierra del Niño, between Algeciraz and

Tarifa, at an elevation of about 2500 feet;" but Mr. Saunders only obtained it in winter at Malaga, and in the mud flats near Cadiz, where it was not numerous.

Passing eastward, again, I find it, according to Bailly (Orn. de la Sav. iii. p. 346), recorded as occurring in Switzerland and Savoy, and common at all seasons of the year, frequenting the lowlands during the winter, and retiring to the mountains to breed, numbers being at that season of the year met with on Mont Grenier, Alpétaz, Nivolet, Margériaz, Rozannaz, Mont Tréloz, Bauges, Mont Cenis, the Maurienne, Tarentaise, and Haut Faucigny Alps. In the winter season numbers are found in the marshes and on the meadows of Bissy, la Motte-Servolex, Bourget, and Albens. It is more abundant in the north of Italy than in other parts; according to Doderlein it nests in the Modenese mountains; and according to Bettoni a few pairs do so every year in the higher regions of Lombardy. In Sicily it is rare; and Professor Doderlein has not succeeded in obtaining it near Palermo, though Cav. L. Benoit procured specimens near Messina. Salvadori says nothing as to its occurrence in Sardinia; but Doderlein states that it occurs there in the winter. Mr. C. A. Wright records (Ibis, 1864, p. 62) one occurrence on Malta, he having shot one by the sea-side on Fort-Manoel Island on the 5th of November, 1860. Both Lindermayer and Von der Mühle refer to *Anthus cervinus* as found in Greece during the summer season; but I feel convinced that the bird they speak of is not the Red-throated Pipit, but the present species. Unfortunately these gentlemen give no descriptions; and hence it is impossible to say with certainty what species of Pipit it is about which they write. I have a specimen from Greece shot in November by Dr. Krüper, which shows that it occurs there in the winter season; and Von der Mühle also states that he met with it on the coast during severe seasons. It winters in Southern Germany; and Seidensacher states that it arrives at Cilli, in Styria, in November, remains over the winter, and leaves in February and March. Messrs. Elwes and Buckley record it from Turkey, on the authority of Mr. Robson; and I have examined several specimens obtained by that collector near Constantinople. In Southern Russia Professor von Nordmann met with it in the most rugged portions of the Adshara Mountains, often at an elevation of 7000 feet, but in the plains he only observed it on three or four occasions during the spring migration, and by May it had quite deserted the lower regions. Mr. Strickland (P. Z. S. 1836, p. 99) obtained it on the coast of Asia Minor, near Smyrna; and Canon Tristram writes as follows (Ibis, 1866, p. 289) respecting its occurrence in Palestine:—"*Anthus spinoletta* we shot but once, in the marshes of the Huleh in spring, but saw it several times in winter near Jericho, where I took a nest of six eggs in April, which I can only refer to this bird, though unfortunately I did not identify them. I also possess a specimen shot at Wady Feiran, near Mount Sinai, in March, a most unlikely locality. It is, however, well known as an Egyptian bird. The specimens exactly correspond with one I shot on the east coast of Ireland." Mr. C. W. Wyatt (Ibis, 1870, p. 15) met with it on the peninsula of Sinai, frequenting the salt ponds near Tor; and it occurs in North-eastern Africa, where, according to Captain Shelley (B. of Egypt, p. 132), "it is a winter visitor to Egypt, when it probably ranges throughout the country, but has not, to my knowledge, been met with in Nubia. It is most plentiful in the Fayoom and Delta, where I found it very abundant in the marshes in February and March."

It has likewise been met with in North-western Africa, where it generally occurs in autumn and winter, and, according to Loche, is found frequenting the low, moist plains and the margins

of rivers. Canon Tristram (Ibis, 1861, p. 414) obtained one specimen, shot out of a small flock, in the marsh at the edge of the oasis of Laghouat in November 1856. He believes also that he saw a flock of this bird (if not of *A. obscurus*) in January 1857 in the swamps near Tuggurt.

To the eastward the Water-Pipit occurs in Persia (whence Mr. Blanford brought back a series of specimens), in North-west India, in the Amoor country, and, according to Mr. Swinhoe, in China and the Kurile Islands. Indian specimens of the Water-Pipit differ from those obtained in Europe and Western Asia in being rather smaller in size and in having the spots on the breast in the winter-plumage very small and clearly defined, utterly unlike those on the breast of our European Water-Pipit. In Canon Tristram's collection are two specimens, one from Jericho and the other from Algeria, which are nearly as small as those from India; but I think that these latter may be distinguished by the peculiarly clear markings on the breast. According to Mr. Brook's labels they have the legs dark brown, and not blackish like our European bird. The average size of my series of specimens from various parts of Europe and North Africa is—culmen 0·69, wing 3·43, tail 2·69, tarsus 1·0; whereas the average of those from India is—culmen 0·6, wing 3·11, tail 2·38, tarsus 0·9. Mr. W. E. Brooks, of Etawah, first observed the above differences in the Water-Pipits from India, and sent specimens to Canon Tristram, requesting him to describe it under the name of *Anthus neglectus*; and if, as I believe will be the case, further investigation proves the correctness of Mr. Brooks's views, the Indian Water-Pipit will bear that name. Canon Tristram, however, having before him only the two specimens from Jericho and Algeria, and no series of European examples, hesitated to describe it as a new species. I give above a table of measurements showing the variation in size of specimens from various localities. Mr. A. O. Hume (Stray Feathers, p. 204) writes that this Indian Water-Pipit is "not at all uncommon in the Western Punjaub and in Northern Sindh, where it is often met with in the neighbourhood of canals and streams. I obtained it on the banks of the Indus, at Mittencote, near Jacobobad, Shikarpore, and Mehur: but I did not notice it south of Sehnan. Besides the localities I have already mentioned, I have it from Mooltan, Lahore, Goorgoon, Ferozepore, Etawah, and the interior of the Simla hills, near Koteghur."

Mr. Swinhoe writes to me respecting the occurrence of the Water-Pipit in China as follows:—"Blakiston first got the bird at Chinkiang, on the Yangtsze; and on his specimen I based my *Anthus blakistoni*. This was a small female shot in February, and has only a few small light spots on the breast. In November 1866 an unsexed specimen was brought to me at Amoy. It was also small, but largely and darkly spotted on the breast. Von Schrenck has sent me a male from the Kurile Islands which is larger and more fulvous; but it bears no date. I have never noticed the bird in a wild state." I have several specimens from South-eastern Siberia, where it appears to be tolerably common during the spring.

The Water-Pipit differs in its habits from the Rock-Pipit, more especially in being an inhabitant of hilly and rugged districts far inland; and only during the seasons of migration does it appear to visit the sea-shore, where the Rock-Pipit is always to be found. So partial is it to mountainous districts that in the mountain-chains of Southern Europe it is a true alpine species, inhabiting the higher regions during the breeding-season, and only descending into the valleys during the winter when driven down by the inclemency of the weather and

consequent scarcity of food. Wherever it is found, however, there must be water in the immediate neighbourhood; and in the summer it is most generally to be met with in rocky and desolate localities close to a mountain-burn, often at a considerable altitude, even above the forest growth, in the immediate vicinity of the eternal snow. Bailly states that it leaves the lowlands about the end of March or early in April, and resorts to the mountains, generally arriving there in small flocks, and waiting until their breeding-haunts are clear of snow. They soon pair, and by the early part of May they commence the serious business of nidification. Two broods are sometimes raised during the season; but this does not appear always to be the case, and is probably so only during mild seasons. It is a shy bird, and less easily approached than almost any of the Pipits; its flight is irregular, not swift or protracted, and somewhat resembles that of the Meadow-Pipit. During the breeding-season, when the female is sitting, the male remains in the immediate vicinity of the nest, generally resting on some point of a rock, a branch, or the summit of a bush, from which it rises twenty or thirty yards into the air singing, and descends like the Meadow-Pipit, still uttering its song until it reaches its perch again, recommencing its aerial flight again after a short interval of repose. Its song resembles that of the Meadow-Pipit, but is deeper in tone and harsher. Bechstein compares it with that of the Swallow and the Siskin; and Bailly says that it consists of the syllables *fli*, *fli*, *fli*, *fi*, *fi*, *fi*, *pi*, *pi*, *pi*, *thi*, *thi*, *thi*, repeated softly at first, and gradually becoming more rapid in utterance; when it flies up it utters a note like the word *hüsch* once or twice, or sometimes only once. It runs swiftly, like a Wagtail, and will wade into the water until it reaches the tibia, carrying the body erect, and every now and again moving its tail. According to Bechstein it bears captivity well, and may be kept for years in an aviary or a large cage. It feeds on small insects and larvæ, especially gnats and various kinds of insects and worms that frequent the water, and likewise devours minute snails, according to Naumann, especially *Helix auricularia*. In searching for food it much resembles the Wagtails in its habits.

The nest is placed on the ground amongst loose stones, in a crevice of rock, or else amongst herbage, the latter being the most common position. According to Bailly it is frequently found under the shelter of the *Rhododendron ferrugineum* or *Vaccinium vitisidea*, and is constructed of fine roots intermixed with pieces of moss, and lined with fine rootlets, a few horse-hairs, dry grass-bents, and pieces of wool, and usually contains from four to five eggs, which are deposited late in April or early in May. I have in my collection a series of eggs from Switzerland which have the ground-colour greyish white, and are closely spotted and marked with minute hair-brown, or, in some specimens, reddish brown markings, which are usually distributed equally over the surface; but in some they are almost confluent towards the larger end. They bear a general resemblance to the eggs of *Anthus obscurus*, and are not easy to distinguish from them; one is so closely spotted with dull dark reddish brown as to look almost uniform brown in colour, whereas others have the ground-colour clearly showing between the spots; some have the ground-colour with a faint olive-green tinge. In size the eggs in my collection vary from $\frac{30}{40}$ by $\frac{23}{40}$ inch to $\frac{35}{40}$ by $\frac{25}{40}$.

In September or, should the season be mild, in October the Water-Pipit forsakes the mountains and descends into the plains, arriving singly or in family parties, but seldom in flocks. Here they frequent the damp meadows or marshes wherever the water remains unfrozen; and

should the season be severe, the larger portion leave to seek a more congenial climate. During this season of the year it feeds also on seeds as well as insect food.

The specimens figured are—to the right an adult bird in full breeding-plumage from Southern France, and to the left also an adult bird, but in full winter-plumage, from Greece, these being the specimens described; and both are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Leiden, Holland, October 10th, 1820 (*Sala*). *b*. France, June 1851 (*Fraser*). *c*, ♂. Piedmont, January 1st, 1869. *d*. Switzerland (*H. F. Möschler*). *e*, *f*. Posen, winter-plumage, March 20th, 1867 (*Dr. Kutter*). *g*, ♂. Macedonia, November 9th, 1869 (*Dr. Krüper*). *h*, ♂. Khathane, Turkey, May 4th, 1869 (*Robson*). *i*, ♂, *j*, ♀. Lake Baikal, Siberia, March 1869. *k*. Darasun, Dauria (*Dr. Dybowski*).

E Mus. Howard Saunders.

a, *b*, ♂, *c*, *d*, ♀. Malaga, Spain, November and December.

E Mus. Ind. Calc.

a, ♂. South Persia (*St. John*). *b*, ♂. Abadeh, 6000 feet elevation, July 1869. *c*, ♀. Dizak, Baluchistan, 4000 feet elevation, March 24th, 1872 (*W. T. Blanford*). *d*, ♀. Dizak, Baluchistan, March 22nd, 1872 (*W. T. Blanford*). *e*, ♂. Kalagan, Baluchistan, March 12th, 1872 (*W. T. Blanford*). *f*, ♂. Mashkid river, near Isfondak, Baluchistan, March 9th, 1872 (*W. T. Blanford*). *g*, ♂. Near Kalagan, Baluchistan, March 19th, 1872, 4000 feet elevation (*W. T. Blanford*).

E Mus. H. B. Tristram.

a, ♂. Jericho, January 1st, 1864 (*H. B. Tristram*). *b*, ♂. Laghouat, November 14th, 1856 (*H. B. Tristram*). *c*. Etawah, November 14th, 1870 (*W. E. Brooks*). *d*, ♀. Beema, January 20th, 1871 (*W. E. Brooks*). *e*, ♀. Beema, January 20th, 1871 (*W. E. Brooks*). *f*, ♀. Utchulda Jheel, January 14th, 1871 (*W. E. Brooks*). *g*, ♂. Beema, January 20th, 1871. *h*, ♂. Egypt, Fayoom, April 3rd, 1871 (*G. E. Shelley*).

E Mus. G. Dawson Rowley.

a. Outskirts of Brighton, October 26th, 1868 (*G. D. R.*).



ROCK PIPIT.

ANTHUS OBSCURUS

194

ANTHUS OBSCURUS.

(ROCK-PIPIT.)

Alauda obscura, Lath. Ind. Orn. ii. p. 494 (1790).
Alauda petrosa, Mont. Trans. Linn. Soc. iv. p. 41 (1798).
Spipola obscura, Leach, Syst. Cat. B. & M. Brit. Mus. p. 22 (1816).
Anthus rupestris, Nilss. Orn. Suec. i. p. 245 (1817).
Alauda campestris, Bewick, Brit. Birds, i. p. 217 (1826, nec Linn.).
Anthus petrosus (Mont.), Flem. Brit. Anim. p. 74 (1828).
Anthus littoralis, C. L. Brehm, Vög. Deutschl. p. 331 (1831).
Anthus aquaticus, Selby, Brit. Orn. i. p. 258 (1833, nec Bechst.).
Anthus obscurus, Keys. & Blas. Wirbelth. p. 48 (1840).
Anthus spinoletta, Macg. Man. Brit. B. i. p. 169 (1846, nec Linn.).
Anthus immutabilis, Degl. Orn. Europe, i. p. 429 (1849).

Pipi obscur, French; *Spioncello settentrionale*, Italian; *Strandpieper*, German; *Oeverpieper*, Dutch; *Skjær-Piber*, Danish; *Skjær-Piblærke*, Norwegian; *Skärpiplärka*, Swedish; *Luotokirvinen*, Finnish.

Figuræ notabiles.

Kjærb. Orn. Dan. taf. 17; Naumann, Vög. Deutschl. taf. 371. figs. 1, 2; Sundevall, Svensk. Fogl. pl. 9. fig. 1; Gould, B. of Eur. pl. 138; id. B. of G. Brit. iii. pl. 10, and pl. 11. hind figure; Schlegel, Vog. Nederl. pl. 95; Nilss. Orn. Suec. i. pl. 9.

♂ *ad. ptil. æst.* corpore suprà olivaceo nigro-fusco striato, uropygio vix striato et magis olivaceo: remigibus nigro-fuscis, pallidiore marginatis, tectricibus alarum pallidè olivaceo terminatis: rectricibus nigro-fuscis olivaceo marginatis, centralibus eodem colore lavatis, rectricibus externis utrinque obliquè fumoso-cinereo terminatis: striâ superciliari flavido-cervinâ: corpore subtùs flavo-cervino, gutture, pectore et hypochondriis obscurè fusco-olivaceo striatis: subalaribus pallidè fumoso-cinereis flavo-olivaceo lavatis: rostro fusco, mandibulâ ad basin aurantiaco-brunneâ: pedibus rufescenti-fuscis: iride fuscâ.

Ptil. hiem. corpore suprà pallidiore et subtùs magis albido et minus striato, gulâ fere immaculatâ.

Adult Male in summer (Fern Islands, May). Upper parts olivaceous, obscurely streaked with dark brown, each feather having a dark centre; rump scarcely marked with brown, and more olivaceous than the rest of the upper parts; wings dark brown; primaries with narrow pale brown edgings on the outer web; secondaries and wing-coverts broadly margined and tipped with pale olivaceous; tail-feathers blackish brown, edged with olivaceous, the two central rectrices washed with that colour, and the outermost on each side with a broad oblique smoke-grey terminal band; over the eye an indistinct yellowish buff streak; underparts buffy yellow, or almost dirty honey-yellow on the breast; throat, excepting the

chin, and flanks with broad, obscurely defined, dark brown or olive-brown streaks; under wing-coverts pale smoke-grey washed with pale yellowish olive; bill dull brown, the base of the under mandible dull orange-brown; legs reddish brown; iris brown. Total length about 6·5 inches, culmen 0·78, wing 3·5, tail 2·65, tarsus 0·95, hind toe with claw 0·75.

Adult Male in winter plumage (Bexhill, Sussex, 2nd October). Differs from the above in being paler and having the underparts much whiter and less streaked, the entire centre of the throat being almost unmarked. It has the underparts, however, washed with dull yellowish, and therein differs conspicuously from *A. spinoletta*, which, in winter plumage, has the ground-colour of the underparts pure white.

The range of this species is extremely limited, compared with that of several others of this group, as it is found only in Northern Europe during the summer and in Central and Southern Europe during the winter.

In Great Britain it is tolerably common all round the coast, frequenting the rocky portions in preference to the flat and marshy localities, and breeds from Cornwall up to the extreme north of Scotland. Mr. J. Gatcombe informs me that it is "resident, and breeds on the coasts of Devon and Cornwall, but their numbers are greatly increased in spring and autumn." Mr. Cecil Smith also writes that he finds it common and resident on the Somersetshire coast, and has taken its nest near Weston-super-Mare. On the coasts of Norfolk it does not appear to be common. Mr. H. Stevenson has sent to me for examination some specimens of the vinous-breasted form, which he informs me were killed within the bounds of the city of Norwich, on the 7th of March 1864; and the date is remarkable, as they were doubtless migrants resting to feed in a locality very unusual for this species. He further informs me that several examples of the ordinary form have been killed on various parts of the coast in autumn and winter, at which season it is not so very rare; but he adds that he has no reason to suppose that it ever remains there to breed. Mr. Cordeaux says (B. Humb. Distr. p. 44) that it is rarely met with on the flat Lincolnshire coast, and then only in the autumn, but it is numerous near Flamborough Head (on the Yorkshire coast) and he has seen it at Spurn, where it breeds; during the autumn it is occasionally met with within the Humber. Mr. Hancock states that it is a resident on the rocky sea-shores of Northumberland and Durham, remaining there throughout the year.

In Scotland it is common; and Macgillivray writes that it is found on most of the coasts, especially those which are rocky, and is not uncommon in the Hebrides; and Mr. Robert Gray (B. of W. of Scotl. p. 117) states that "on all the western islands, including the Outer Hebrides, Monach Isles, Haskar Rocks, and St. Kilda, it is equally common, breeding in similar situations, and keeping strictly to the sea-margin." Mr. Dunn found it very abundant in all parts of Shetland; and Captain Clark-Kennedy informs me that he has met with it very abundantly along the shores of Caithness, Sutherland, and others of the northern counties of Scotland, and especially numerous on the Orkneys.

In Thompson's 'Birds of Ireland' (i. p. 227) we read, this Pipit "inhabits the sea-coasts throughout the year, and has on those of the north, east, west, and south commonly occurred to me. Although this species does not appear in Mr. Templeton's published Catalogue of Irish

Vertebrata, I find, by reference to his MS., that he was acquainted with it. Under the name of *Alauda petrosa*, he remarked, 'common about the rocks on the shore.' It is nowhere more plentiful than about the rocky marine islets, of which Tory, off the north of Donegal, and the south islands of Arran (off the Bay of Galway), by reason of their extreme position, may be particularized. Mr. Poole, writing of the county of Wexford, remarks that the nest is generally on the slope of a grassy bank, or in cliffs at no great height above the sea, is composed of dry grass-stalks, and lined with a few black horse-hairs. He has found nests containing eggs, and others having young, on the 7th of May; a bird which he startled from her nest feigned being hurt, evidently to draw his attention thence to herself. At the Giant's Causeway, where these birds are particularly numerous, I have been much interested, in the middle of June, by observing them ascend gradually to a great height in the air, uttering continuously 'cheep-cheep' between each beat of the wings, and then descend in perfect silence as quickly and at about the same angle, perhaps fifty degrees. The descent was accomplished with motionless wing, their little breasts being shot out like puff-balls. From my always seeing a pair of these birds about the wall at the neighbouring salmon-cuts (Bush-foot), I had no doubt of their having a nest in some of its apertures." It does not occur in Greenland or Iceland; but Captain Feilden records it as numerous in the Færoes: "During my frequent boat-journeys," he says, "this bird was constantly seen fluttering along the rocks in search of food, frequently engaged in aërial gambols with its mate."

In Scandinavia it is tolerably common: and here also both the vinous-breasted and common form are found; but the latter appears to predominate; and I can find no reason to infer that the two forms have a distinct breeding-range. Mr. Robert Collett informs me that in Norway it is found exclusively on the sea-coast, and breeds commonly on the islets and rocks along the entire coast from the Hvalöer islands to the North Cape and Varangerfiord. It never penetrates far up the fiords, and is rare on the Christiania fiord, north of Dröbak, and never occurs in the interior, as it is stated to have done in Sweden. This is the only Pipit that to some extent winters annually on the coasts of Norway; for large flocks are seen on the rocks skirting the southern coasts throughout the winter; but large numbers migrate, leaving for the south in October and November, and returning in March or April. Pastor Sommerfelt records it as not uncommon on the Varanger fiord, where it arrives early in April, and is the last songster that leaves, remaining till the middle of November. It breeds up the fiords, but not so commonly as on the sea-coast. In Sweden, Professor Sundevall says, it is found on the coast here and there from Skåne northwards. In Skåne it occurs, he says, at Kullen; and Mr. Meves informs me that he observed it on Bornholm. Many remain in Sweden over winter, at least in Bohuslän, if not elsewhere on the coast. It is a great favourite with the Swedish fishermen, as it feeds on the *Cancer pulex*, which is so destructive to their nets. In Finland the Rock-Pipit is not common; but Von Wright observed it at Hangö-udd. I have but meagre data respecting its occurrence in Russia; but Mr. Sabanäeff informs me that, according to Daniloff, it is said to breed in the Orloff Government. It occurs on the southern coasts of the Baltic during the winter and on passage; but Herr E. von Homeyer states positively that it is never met with there in the summer. Kjærbölling (Danm. Fugl. p. 144) says that Faber met with it in the summer of 1824, on

Veïeröen, Kyholmen, and Hjelmen; and Hage got it at Flensborg and Hoe, and shot seven on Moen. Kjærbölling himself had it from Jutland, Apenrade, and other places; and Mr. Teilmann shot specimens on the Apenrade fjord and Fanöe in 1839. On the coasts of Holland and Belgium it occurs regularly in spring and autumn on passage; and Baron von Droste Hülshoff records, under the name of *Anthus aquaticus*, what I believe, from his description, to be the vinous form of this species, as occurring on the island of Borkum during the autumn migration, at which season, he adds, it is not rare. In France it appears to be resident on the coasts of Normandy and Brittany, and breeds abundantly amongst the rocks of the peninsulas and islands between Brest and Lorient. At the seasons of passage it is found along the whole seaboard from Dunkerque to Bayonne; but I do not find it recorded from Southern France or the Mediterranean coast of that country. I have no data respecting its occurrence in Portugal, and am doubtful if it occurs in Spain. Colonel Irby writes (Orn. Str. Gibr. p. 110) as follows:—"My only reason for including the present species is, that I brought home a specimen, shot among many others on the mud at Palmones, near Algeciraz, in March 1870, which was identified by Mr. Sharpe as being *Anthus obscurus*. Not having obtained any since, it is quite possible there may have been some error about it, and that the species does not occur in Andalucia." Salvadori has no knowledge of its occurrence in any part of Italy; nor does Doderlein record it amongst the visitants to Sicily; but Mr. C. A. Wright states (Ibis, 1869, p. 246) that it has once occurred in Malta. Lord Lilford speaks of it (Ibis, 1860, p. 229) as being found in Corfu and Epirus; but he now informs me that this statement was founded on error, and that he never met with the present species in Greece; nor is it recorded from that country by any of the ornithologists who have worked at the natural history of that country. Canon Tristram has sent me a specimen said to have been obtained in Greece; but I cannot help thinking that some mistake has been made in the locality. It has not been met with in North Africa, except by Favier, who says that it occurs in winter near Tangier; and I have obtained confirmation of this statement by having a specmen sent to me by M. Olcese, which I find is undoubtedly a Rock-Pipit in winter dress.

The present species is essentially a shore-bird, frequenting the barren rocky portions of the coast, and never penetrating far inland. Though generally distributed, it is nowhere very common; and as it is confined to the coast, it is not so easily observed as the Meadow- and Tree-Pipits. In general habits it closely resembles the Meadow-Pipit, and may be seen in suitable localities running about amongst the rocks in search of its food, which consists chiefly of insects and their larvæ; but Mr. Collett informs me that in the autumn he has shot specimens which had their stomachs filled with seeds and vegetable matter. It is usually found amongst the rocks or where there is an abundance of sea-weed; and where the retiring tide leaves a large tract uncovered these birds may be seen carefully examining the crevices of the rocks or the masses of sea-weed in search of their insect food. Macgillivray writes (Brit. B. ii. p. 197) that "its food consists of insects, larvæ, small molluscous animals, and seeds of various kinds, in searching for which it mixes with the Meadow-Pipits, and sometimes with Snowflakes and Sky-Larks. In summer, when masses of sea-weeds happen to be cast on the shore and become putrid, they find among them an abundant supply of larvæ; and at all seasons they frequent the ebb, in order to

pick up minute shell-fish and other marine animals, often mingling with Redshanks, Turnstones, or Purres. The flight of this species is wavering and desultory; and its cry is a repeated shrill 'cheep.' When disturbed while feeding, it flutters about, frequently repeating its note, settles on a rock or stone, or on the grass, keeps vibrating its body, and waits until the intruder departs. But although shy, it is so only after a fashion; for it seems to consider itself safe at no great distance: and indeed it may generally do so with impunity; for it is very seldom molested, neither its colour nor the quality of its flesh being sufficiently attractive to the sportsman to induce him to hold it in request. It is scarcely gregarious at any season, but in winter may be said to be at least not unsocial." The song of the Rock-Pipit is tolerably pleasing, but not so prolonged, and much poorer in quality, than that of the Meadow-Pipit. When singing it rises in the air like the Tree- or Meadow-Pipit, and gradually descends to its perch on a rock or stone, uttering its song all the while. Should an intruder approach its nest, it flies restlessly round, evincing the utmost anxiety, and constantly utters its querulous call-note.

Nidification commences late in April or early in May; and the nest is placed on the ground, in a bank, or under a stone or ledge in the face of a cliff, or amongst moss. It is generally in some situation immediately overlooking the sea, or not far inland, and is constructed of bents and blades of grass, sometimes intermixed with sea-weeds, and lined with finer bents, and occasionally with a little horsehair.

The eggs, from four to five in number, vary considerably, but are separable into two forms —one reddish brown, the other olive—between which, however, there is every gradation to be met with. In those in my collection, all of which are from the Scotch coast, the ground-colour is grey with an olive-green tinge, and the markings, which are small and very closely distributed over the surface of the shell, are dark brown with a reddish shade; but I have seen others in which the markings are quite olivaceous brown in colour. In size they average about $\frac{33}{40}$ by $\frac{26}{40}$ inch.

As stated by Professor Newton in the edition of Yarrell's 'British Birds' which he is now editing, there are two forms of the Rock-Pipit—one of which, during the breeding-season, has the breast tinged with vinous, and has by some authors been treated as a distinct species, under the name of *Anthus rupestris*, Nilss., and the other, our common British Rock-Pipit, which has the breast honey-yellow. Nearly two years ago I put aside the present article, then half written, because I found that I required further data respecting the vinous-breasted form, and have since then obtained as much information as can be had, and have examined a considerable series of specimens, the result being that I cannot separate these two forms specifically. It is true that in the south of England the vinous-breasted form appears occasionally in flocks separate from the ordinary honey-breasted form; but during the breeding-season they do not appear to have distinct breeding-ranges, but breed together; and in measurements and winter dress they are quite inseparable. The vinous-breasted form breeds, though probably rarely, in Great Britain, where, I may add, it has very generally done duty as the Water-Pipit (*Anthus spinoletta*); for after a careful search into the various recorded occurrences of this latter species, only three could, I found, be relied on, all the rest being, so far as I could judge, the vinous-breasted form of the present species. Mr. Hancock states that he has received this form from Chepstow with the

egg, which was carefully verified as belonging to the bird sent, and which, he adds, does not differ from the egg of the ordinary honey-breasted form. In the series I have examined I have found the one form graduate into the other, and some specimens are difficult to determine as to which they most resemble; and Mr. Hancock has arrived at the same conclusion from a careful examination of specimens which have passed through his hands. I can, however, scarcely confirm his statement that the vinous-breasted form is the prevalent one in Sweden. This is certainly not the case in Norway; for Mr. Collett refers to the occurrence of one breeding on the Hvalöer amongst individuals of the honey-breasted form as an exceptional case. And, judging from Von Wright's descriptions (Finl. Fogl. i. p. 145), only the common form is found in Finland. I have carefully measured a large series of both forms and can find no constant, but only individual, variation in measurements.

Mr. Gatcombe writes to me (respecting a most peculiar monstrosity of this species, recorded by him in the 'Zoologist' for February 1873):—"This bird had *four* legs but no tail (at least where it should have been); but there was a most perfect one growing on the head, just above the left eye, projecting behind much like the depressed crest of a Hoopoe. This head-tail (if I might so call it) was quite perfect, and the outer feather on each side marked with the usual dull white. Two of its legs were in their proper places; but the other pair were dangling from behind, the feet touching the ground, but of no earthly use, being dragged along, as it were, after the bird, and appeared thin, shrivelled, and very light in colour, with the claws much produced. I watched this bird, off and on, for more than two hours with a powerful telescope, and could see it as plainly as if it were in my hand. It was very active, running about and feeding among the sea-weed in company with many of its own species and others, none of which attempted to molest it. From either side of the rump of this extraordinary bird sprang tufts of 'fluffy' slate-coloured feathers, from under which the legs appeared. I have now by me a very young duckling similar with regard to the legs, but the tail growing out of the side instead of on the head. The most extraordinary circumstance concerning the Rock-Pipit seems to be that of its having arrived at a state of maturity, such monstrosities, I believe, being seldom known to live."

On the Plate, in the foreground, to the right, is figured the male specimen above described, and in the background, to the left, a very fine specimen of the vinous-breasted form or variety—both birds being in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Hampstead, October 5th, 1869 (*Davy*). *b*, ♂, *c*, ♀. Bexhill, Sussex, October 2nd, 1860 (*H. E. D.*). *d*, *e*. Brighton, Sussex, October 26th, 1869 (*Davy*). *f*, ♀. Hythe, February 9th, 1874 (*Colonel Irby*). *g*, *h*. Orkney (*Dunn*). *i*. Aker, Norway, April 5th, 1862 (*R. Collett*). *k*. Hvalöe, Norway, May 27th, 1865, vinous-breasted form, shot from nest (*R. C.*). *l*, *pull.* Jæderen, Norway, June 1872 (*R. C.*). *m*, ♂. Leiden, Holland, October 11th, 1870 (*Sala*). *n*. Tangier (*Olcese*).

7

E Mus. H. Stevenson.

a, ♂, *b*, ♀. Norwich, March 7th, 1864, vinous form (*H. S.*).

E Mus. H. B. Tristram.

a, *b*. Farn Islands, May 1859. *c*. Farn Islands, May 1st, 1853. *d*. Teesmouth, Durham. *e*. Northumberland (*W. Proctor*). *f*, ♂. Greece?, February 9th, 1858 (*H. B. T.*).

E Mus. J. H. Gurney, jun.

a, ♂. Hunstanton, October 6th, 1871 (*Baker*). *b*, ♂. Greatham, March 16th, 1866. *c*, ♂. Bamborough, April 27th, 1866. *d*, ♀. Seaton, March 26th, 1866 (*J. H. G., jun.*). *e*, ♀. Minehead, November 28th, 1867. *f*, ♀. Lynn, February 1870. *g*. Plymouth, February 10th, 1865 (*J. Gatcombe*).

E Mus. G. Dawson Rowley.

a, ♀, *b*, ♀. March 15th, 1869. *c*, ♂. March 17th, 1869. *d*, ♀. March 18th, 1869. *e*, ♂, *f*, ♀. February 19th, 1869, all vinous forms from Brighton (*G. D. R.*).

Family PYCNONOTIDÆ.

Genus PYCNONOTUS.

Turdus apud Linnæus, Syst. Nat. i. p. 295 (1766).
"*Pycnonotus*, Kuhl," Boie, Isis, 1826, p. 973.
Ixus apud Ehrenberg, Symb. Phys. *Aves*, fol. *bb* (1829).
Hæmatornis apud Lesson, Rev. Zool. p. 98 (1840).
Ixos apud Fraser, Proc. Zool. Soc. 1843, p. 27.

The birds comprised in this genus inhabit the Ethiopian Region down to South Africa, the south and south-eastern portions of the Western Palæarctic Region, and the Oriental Region down to Sumatra and Malacca. Three species only are found within the limits of the Western Palæarctic Region, two being residents, whereas the third is only a rare straggler from South Africa. A fourth species, *Pycnonotus arsinoë* (Licht.), is found close to the borders of our region in North-east Africa, but cannot justly be included as a Western Palæarctic bird. In habits the Bulbuls are said to resemble the Babblers (*Argya*). They frequent bush-covered localities, and are said to evince a partiality for places not far from the sea. They are noisy and garrulous like Jays; and their flight resembles that of those birds. They feed on insects, berries, and fruit, and are extremely partial to oranges. Their nest, which they usually place in fruit-trees, resembles that of the Woodchat; and they lay dull white eggs, closely marked with purplish grey and dull red spots and blotches.

Pycnonotus capensis, the type of the genus, has the bill moderately long, slightly decurved; nostrils oval, basal, placed in the anterior part of the nasal depression; gape furnished with a few tolerably strong bristles; wings rather short, broad, and rounded, the first quill short, the second rather shorter than the ninth, the fourth, fifth, and sixth nearly equal and longest; tail moderately long, nearly square; tarsi tolerably strong, covered in front with one plate and three inferior scutellæ; feet moderately stout, the hind toe rather strong, claws moderate, curved, acute, laterally grooved.



DUSKY BULBUL.

PYCNONOTUS BARBATUS.

PYCNONOTUS BARBATUS.

(DUSKY BULBUL.)

Turdus barbatus, Desfont. Mém. de l'Ac. Roy. des Sciences, p. 500, pl. xiii. (1787).
Ixos obscurus, Temm. Man. d'Orn. iv. p. 609 (1840).
Haematornis lugubris, Less. Rev. Zool. 1840, p. 98.
Ixos inornatus, Fraser, Proc. Zool. Soc. 1843, p. 27.
Ixos obscurus (Temm.), Schlegel, Rev. Crit. p. xlii. (1844).
Pycnonotus obscurus (Temm.), G. R. Gray, Gen. of Birds, i. p. 237 (1844–49).
Pycnonotus inornatus (Fras.), G. R. Gray, ut suprà (1844–49).
Ixos ashanteus, Bp. Consp. Gen. Av. i. p. 266 (1850).
Pycnonotus ashanteus (Bp.), J. W. von Müll. J. für Orn. 1855, p. 394.
Ixos barbatus (Desf.), Bp. Cat. Parzud. p. 7, sp. 216 (1856).

Bou lág-lág, Moorish; *Naranjero*, Spanish.

Figuræ notabiles.

Desfont. *l. c.*; Sharpe, P. Z. S. 1871, pl. vii. fig. 3.

♂ *ad.* corpore suprà umbrino-cinereo, capite saturatiore, loris et regione ad basin rostri nigricanti-umbrinis: mento et gulâ superiore saturatè fusco-umbrinis, hâc versus pectus pallidiore: pectore et hypochondriis pallidè fusco-cinereis: abdomine centrali, crisso subcaudalibusque albis: alis et caudâ saturatè fuscis: iride fuscâ: rostro et pedibus nigris.

♀ *ad.* haud a mare distinguenda.

Pull. adulto similis sed vix sordidior.

Adult Male (Algeria). Upper parts dull brown, rather paler than in *P. capensis*; head darker than the rest of the upper parts, being dark umber-brown; lores and space in front of the eye at the base of the bill blackish; chin and upper throat dull dark brown, gradually fading into pale ashy brown on the breast and the rest of the underparts, except the centre of the abdomen, crissum, and under tail-coverts, which are pure white; wings and tail dull dark brown; iris dark brown; bill and feet black. Total length about 8 inches, culmen 0·7, wing 4·1, tail 4·2, tarsus 1·0.

Female. Similar to the male.

Young. Resembles the adult, but is a trifle duller.

The present species of Bulbul inhabits North-western Africa from Algeria and Morocco down the coast as far as the Gaboon. Temminck certainly stated that it had occurred in Southern Spain; and on his authority it has been by most authors included amongst those species which inhabit Europe proper; but more recent investigation has shown that Temminck must have been

in error, for no trace of its occurrence in Spain has since been found. Colonel Irby says that, if found anywhere, the coast near Tarifa would be the most likely ground; but the most careful investigation resulted in his failing to find any sign of such a bird as the Dusky Bulbul. In Algeria, however, it is a tolerably common and resident species; and Loche writes that it frequents wooded districts, is not shy, and may easily be approached. Its flight is not strong or rapid; and it is generally seen moving about amongst the trees, uttering its pleasant and clear song, which is a repetition of the same syllables varied and modulated, the syllables resembling the words *tou-tu-tou-on*, *tou-tu-tou-on*. Its food consists of insects, berries, and wild fruits. It is sedentary, and lives in families in the district it has fixed on, merely flying from tree to tree in pursuit of insects. It nests late, and conceals its nest with the greatest care, usually placing it in the orange-trees. The nest is constructed of fine roots and stems of plants; and the number of eggs deposited is four, these latter being white, marked indistinctly with brownish, and closely spotted with numerous irregular dots of violet rose-colour and reddish brown. In size the eggs measure 22 by 18 millims. It does not, he adds, commence nidification in Algeria before June, and he has found nests containing fresh eggs as late as August and September. Mr. Salvin observed it, and obtained specimens at Kef Laks; and Mr. Taczanowski says (J. f. O. 1870, p. 45) that he met with it in all bush-covered localities in the highlands of Algeria, especially in districts not far distant from the sea; but at Batna he did not observe any, nor did he ever meet with one in the desert. Mr. J. H. Gurney, jun., who also met with it in Algeria, writes (Ibis, 1871, p. 78) as follows:—"These birds get up in a wood in coveys of eight or ten, like a party of young Jays, from thick scrub and brambles. Their Jay-like flight is as different as possible from that of the shy but active Blackbird; and when once flushed they no longer seek to bury themselves in the foliage, but perch in the most exposed situations. From among the feathers of the occipital region of one which I shot at Oued el Alleg grew a few very slender filaments divided into branches, and about $\frac{3}{4}$ inch in length." Colonel Irby writes (Orn. of Str. Gibr. p. 76) that, according to Favier, it is "very abundant and resident around Tangier. When the oranges are ripe they are always to be heard and seen chattering and fighting in the gardens. They nest in May, June, and July, laying from three to four eggs, which are very thin-shelled and tender, of a greyish white colour, marbled or spotted with reddish spots of two or three shades of brown and purple. The nest is built in the branches of fruit-trees (orange, apricot, pear, &c.), and is shaped like that of the Woodchat Shrike, coarsely interlaced outside with ends of small roots and with creeping plants. They feed on all kinds of fruit and different flowers, are very fond of oranges, and prefer them to any thing else." Colonel Irby himself found the present species numerous in the gardens just outside Tangier, and says that they reminded him much of some of the Indian Babblers (*Crateropus*), particularly in their flight and garrulous chattering. Besides this noise, he says (*l. c.*), "they have a melodious whistle which I took down at the time and tried to note thus, *Pwit*, *Pwit*, *Qŭitĕrā*, *Qŭiterā*, rather in the tone of a Blackbird. This song (if it may be so called) and their chatter are so remarkable as to attract attention at once. . . . . Among the Jews who speak Spanish they go by the name of 'Najanero' (litt. 'The orange-man'), from their orange-eating propensities. They make a clean hole in the side of an orange, and completely clean it out, leaving nothing but a shell of orange-peel, which remains hanging on the tree. I have more than once pulled these husks down, taking them to

be sound fruit. Owing to the mischief they thus do, they are not favourites, and consequently are more timid near Tangier than about Larache, where I shot some of them."

Found (as above mentioned) on the west coast of Africa as far down as the Gaboon, it has been obtained at Senegal and Lagos; and Captain Shelley has lent to me a nice series from Fantee, and one example from the Gaboon, which latter does not differ from specimens from Fantee.

All the information I can glean respecting the habits of the present species is given above. I possess a single egg obtained in Algeria by Captain Loche, which in size is rather larger than the eggs of *Pycnonotus xanthopygus*, which it also resembles in colour and markings; but the latter are duller. It is dull white in colour, closely marked with purplish grey underlying shell-markings and red overlying surface-spots and marblings, and measures $\frac{39}{40}$ by $\frac{29}{40}$ inch in size.

Specimens of the Dusky Bulbul from Tangier have the head darker than others from Algeria, and agree closer with examples from Fantee, which latter appear to run somewhat smaller than those from Algeria and Tangier; but a critical examination of the series in the collection of Captain Shelley shows that examples from Fantee vary in size from culmen 0·7, wing 3·6, tail 3·3, tarsus 0·85, up to the size of the specimen from Algeria above described, or even somewhat larger. According to Mr. R. B. Sharpe (P. Z. S. 1871, p. 132) the Bulbul from the Gaboon is distinct from the present species, having the under tail-coverts tinged with yellow, and being darker in colour; and he consequently gave it the name of *Pycnonotus gabonensis*. However, the present species certainly occurs also at Gaboon, as a specimen from there in Captain Shelley's collection does not in the least differ from examples from Fantee. In North-east Africa there is a species not unlike *Pycnonotus barbatus*, which, however, does not occur within the limits of the Palæarctic Region. This species, *Pycnonotus arsinoë* (Licht.), inhabits North-east Africa, being found most frequently in Nubia and Abyssinia, but does not pass below the second cataract of the Nile. It differs from the present species in having the head and upper throat blackish, the upper parts rather paler, and the under tail-coverts and crissum pure white, and is smaller in size.

The specimens figured and described are an adult male from Algeria, in my own collection, and a young bird in the collection of Canon Tristram.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, *c*, *d*. Algeria (*Fairmaire*).

E Mus. H. B. Tristram.

a, ♂. Algeria, June 16th, 1856 (*H. B. T.*). *b*, *juv.* Algiers, 1856 (*H. B. T.*).

E. Mus. Howard Saunders.

a, ♂, *b*. Tangier (*Olcese*).

E Mus. G. E. Shelley.

a, ♀. Algeria (*Verreaux*). *b*, ♂, *c*, ♀. Tangier, March 13th, 1873 (*G. E. S.*). *d*, *e*. Accra, February 15th, 1872 (*G. E. S.*). *f*. Fantee, January 30th, 1872 (*G. E. S.*). *g*. Fantee, March 7th, 1872 (*G. E. S.*). *h*. Gaboon (*Ansell*).



1. PALESTINE BULBUL.
PYCNONOTUS XANTHOPYGIUS.

2. GOLDVENTED BULBUL.
PYCNONOTUS CAPENSIS.

PYCNONOTUS XANTHOPYGUS.

(PALESTINE BULBUL.)

Ixus xanthopygos, Ehr. Symb. Phys. Av. fol. *bb* (1829).
Ixos vaillantii, C. L. Brehm, Vogelfang, p. 221 (1855, nec Temm.).
Ixos vallombrosæ, Bp. Compt. Rend. xlii. p. 766 (1856).
Ixos xanthopygius (Ehr.), Tristram, Ibis, 1859, p. 30.
Ixus xanthopygius (Ehr.), Tristram, Ibis, 1865, p. 81.
Pycnonotus valombrosæ (Bp.), Heuglin, J. für Orn. 1867, p. 203.
Pycnonotus xanthopygius (Ehr.), Sharpe, P. Z. S. 1871, p. 131.
Pycnonotus nigricans, Hartlaub, Griech. Jahreszeiten, iii. p. 229 (1875, nec Vieill.).

Figura nulla.

♂ *ad.* capite et collo superiore nitidè nigris: corpore suprà pallidè cinereo-umbrino: remigibus primariis umbrinis, secundariis dorso concoloribus: uropygio saturatiore: caudâ saturatè umbrinâ, pallidè brunneo vix apicatâ: corpore subtùs albido vix cinereo tincto, pectore et hypochondriis cinereo-brunneo lavatis, crisso et subcaudalibus lætè flavis: rostro et pedibus nigris: iride rufescenti-fuscâ, marginibus palpebrarum pallidè brunneis.

♀ *ad.* haud a mare distinguenda.

Adult Male (Syria). Entire head and upper neck glossy black, not merging into the colour of the rest of the upper parts and lower throat, but clearly and sharply defined; upper parts dusty ashy brown, becoming umber-brown on the primaries, the upper tail-coverts being also rather darker than the rest of the upper parts; tail umber-brown, with rather paler tips to the feathers; underparts dull white, washed with pale ashy brown on the breast and flanks; vent and under tail-coverts brilliant king's-yellow; bill and legs black; iris dark brown; edge of the eyelid light-coloured. Total length 7·5–8 inches, culmen 0·7, wing 3·7, tail 3·8, tarsus 0·9.

Adult Female. Similar to the male.

The range of this Bulbul is somewhat limited, as it occurs only in the south-eastern portion of the western Palæarctic Region. According to Dr. Krüper it has been met with in the Greek archipelago; for he writes (Griech. Jahresz. iii. p. 229) as follows:—"This species, which is tolerably common at Beyrout and Damascus, in Syria, and also occurs at Cyprus and Rhodes, visits the Cyclades annually; and a few examples have been obtained there. I did not personally meet with it, but obtained three sittings of eggs on Naxos." Except this note of Dr. Krüper, I have no data whatever of its occurrence in Europe proper; but it is extremely common in Palestine, where, Canon Tristram writes (Ibis, 1859, p. 30), "it was found in all parts of the country, wherever there is wood or gardens, from Jaffa to the Jordan. In its skulking habits it exactly resembles the *Ixos obscurus* of Algeria; but its brilliant saffron vent renders it conspicuous

among the bushes. The head and throat are of a deep black; and there is scarcely any perceptible difference between the sexes in plumage, but that the black on the head of the female is not quite so bright. It is the finest songster in Palestine, and has obtained the name of the Palestine Nightingale, which is well deserved, whether for the volume or the variety of its notes. It wants, however, the last two notes of the Nightingale's song. On arriving at the banks of the Jordan long before sunrise, at 4 A.M., the thick jungle which fringes the river was alive with the cheery notes of these unseen musicians, who continued their concert until nearly noon." He further writes (Ibis, 1865, p. 82):—"We found it plentiful in the Jordan valley, and in all the sheltered wadys and wooded lowlands on both sides of the river, as well as in the plains of Sharon, Acre, and Phœnicia, the glades of Carmel, and occasionally even in the sea-bound valleys of the Lebanon as far as Beyrout, but never in the hill country. I have never seen specimens from Egypt or Asia Minor, though I have met with it in a collection said to have been made in the Red Sea." Captain Shelley did not meet with it in Egypt, though he includes it in his work; and Von Heuglin writes (Orn. N.O.-Afr. p. 399), "it inhabits the date- and tamarisk-groves of Arabia Petræa and Arabia Felix, Wadi-Araba, Palestine, and Syria, where it appears to be resident; but we only had opportunities of seeing it during winter. In its habits it resembles *P. arsinoe*, but is more lively; its song is louder and more varied; and on account of this latter quality it is often kept in confinement." Beyond the countries above named, I know of no locality where the present species is known to occur.

Messrs. Finsch and Hartlaub (Vög. Ost-Afr. p. 297) unite the present species with *Pycnonotus nigricans*, Vieill.; it will therefore be necessary for me to state my reasons for keeping them distinct. Having a very rich series of both species before me, I find that they constantly differ as follows:—*P. nigricans* has the upper parts darker than in *P. xanthopygus*, and has the edge of the eyelid black, and not light-coloured. In *P. nigricans* the throat is dark brown and the breast lighter brown, the one shade gradually merging into the other, and the abdomen is pure white; whereas in *P. xanthopygus* the throat is black, and the breast very pale greyish brown, the division of the two colours being very sharply defined, and the abdomen is dull whitish or pale whity brown, not pure white. From the list at foot it will be seen how many specimens of the present species I have examined; and I may add that I have had the use of a good series of *Pycnonotus nigricans*, for the loan of which I am indebted to Captain G. E. Shelley.

Respecting the habits of the present species I find but little on record beyond the data above given; but Canon Tristram adds (Ibis, 1865, p. 81) the following particulars respecting its nidification:—"It is never gregarious, but scattered throughout the year in pairs, and commences its song soon after Christmas. For its music it well merits the name of Bulbul; and I never heard a finer songster, except the Nightingale, which it much resembles in power and variety of note. It is easily approached, and by no means so shy as most of the Turdidæ The nest is very small and neat, placed either in the small fork of a tree or on a side branch, and covered externally to match the bark of the branch on which it rests. In character and structure it much resembles that of the Chaffinch. The eggs are three, seldom four; and while some pairs have hatched their young in March, others do not lay till towards the end of April. The egg partakes of the beautiful character of all the Pycnonotidæ, covered with rich chocolate,

crimson, and pink blotches and spots, and about the size of that of the Sky-Lark. It is subject to considerable variation in the intensity and size of the markings." I possess eggs collected in Palestine by Canon Tristram, which are white, covered with faint purplish underlying shell-markings, and clearly defined chocolate-crimson surface-spots. In size they measure from $\frac{7}{8}$ by $\frac{54}{80}$ to $\frac{75}{80}$ by $\frac{56}{80}$ inch.

The present species is easily kept in confinement, and is an excellent cage-bird. Mr. C. A. Wright informs me that he has kept them for long in confinement, and speaks very highly of their power of song. We have, however, only quite recently had the first living specimen in the Zoological Society's Gardens at Regent's Park, Mr. E. T. Rogers, C.M.Z.S., late Vice-Consul at Cairo, having presented one to the Society; and it arrived just in time to enable my artist to colour his sketch from the living bird instead of from the dried skin.

The specimen figured and described is an adult male from Syria, in my own collection, the soft parts, however, being taken from the living specimen in the Zoological Society's Gardens.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Syria (*E. C. Taylor*). *b*, ♀. Jericho, January 2nd, 1864 (*H. B. Tristram*).

E Mus. Howard Saunders.

a. Jericho, January 11th, 1864 (*H. B. Tristram*).

E Mus. H. B. Tristram.

a, ♂. Jericho, January 2nd, 1864 (*H. B. T.*). *b*, ♂. Plain of Sharon, March 24th, 1858 (*H. B. T.*). *c*, ♂. Ghor el Safieh, January 28th, 1864 (*H. B. T.*). *d*. Ghor el Safieh, February 7th, 1872 (*H. B. T.*). *e*, ♂. Sidon, December 1st, 1863 (*H. B. T.*). *f*, ♂. Palestine, December 7th, 1863 (*H. B. T.*). *g*, ♂. Palestine, December 5th, 1863 (*H. B. T.*). *h*, ♂. Palestine, May 25th, 1864 (*H. B. T.*).

PYCNONOTUS CAPENSIS.

(GOLD-VENTED BULBUL.)

Turdus merula fusca capitis bonæ spei, Briss. Orn. ii. p. 259, pl. 27. fig. 3 (1760).
Turdus capensis, Linn. Syst. Nat. i. p. 295 (1766, ex Briss.).
Le Brunet du Cap de Bonne espérance, Montb. Hist. Nat. Ois. iii. p. 390 (1775).
Le Brunet, Levaill. Ois. d'Afr. iii. p. 36, pl. 105 (1802).
Pycnonotus capensis (L.), G. R. Gray, List of Gen. of Birds, p. 29 (1840).
Pycnonotus chrysorrhœus, Thompson, Ann. Nat. Hist. 1845, xv. p. 308, nec Temm.
Turdus aurigaster, Yarr. Brit. Birds, Suppl. p. 15 (1845, nec Vieill.).
Pycnonotus aurigaster, G. R. Gray, Cat. of Brit. Birds, p. 84 (1850, nec Vieill.).
Ixos capensis (L.), Bonap. Consp. Gen. Av. p. 267 (1850).

Figura unica.

Levaillant, *l. c.*

Ad. capite, collo, dorso et uropygio sordidè umbrinis, capite vix saturatiore, frontis et pilei plumis vix elongatis: alis et caudâ saturatè umbrinis: gulâ et gutture dorso concoloribus, pectore et hypochondriis pallidioribus: abdomine centrali albido, versus crissum purè albo, plumis versus apicem vix sulphureo tinctis: crisso et subcaudalibus lætè flavis: pedibus et rostro nigris: iride rufescenti-fuscâ, marginibus palpebrarum sordidè rufescentibus.

Adult (Cape of Good Hope). Head, neck, back, and rump uniform umber-brown, the head rather darker than the rest of the upper parts; feathers on the forehead and crown slightly elongated; wings and tail dark umber-brown, the latter with very indistinct bars (such as are observable in *Locustella luscinioides*), which, however, can only be seen in certain lights; throat and neck in front similar in colour to the back, becoming gradually paler on the breast and flanks, the centre of the abdomen being dull whitish, but the lower part becoming almost pure white, tinged with sulphur-yellow towards the vent; vent and under tail-coverts bright king's yellow, edge of the wing sulphur-yellow; legs and bill black; iris deep brown with a reddish tinge, edge of the eyelids deep red. Total length about 7·75 inches, culmen 0·8, wing 3·55, tail 3·5, tarsus 0·9.

Obs. Captain Shelley, who has shot the present species in South Africa, assures me that the edge of the eyelid is always dull dark red, whereas in *Pycnonotus nigricans* it is blackish. In Levaillant's plate of *Le Brunoir* (Ois. d'Afr. pl. 106. fig. 1), on which *P. nigricans* was based, the edge of the eyelid is given as red (which is evidently an error); and at first I was inclined to believe that this figure might represent true *P. capensis*; but after a careful comparison with skins I found that this was not the case, but that the only difference between it and *P. nigricans* is the coloration of the edge of the eyelid.

It is with some hesitation that I include the present species as belonging to the Western Palæarctic avifauna; for its only claim to a place in it rests on the single occurrence in Ireland. However, as Professor Newton retains it in his edition of Yarrell's 'British Birds,' I have deemed it best not to exclude it from the present work. The record of the Irish occurrence is

as follows:—"In the month of January 1838, this South-African bird was shot at Mount Beresford, three miles and a half from Waterford, by a lad while out shooting Blackbirds and Snipe. Considering it a hen of the former, he sold it to Dr. Robert Burkitt, who skinned and preserved it; the sex, however, was not noted. The specimen was exhibited by the late Mr. Thompson at the meeting of the British Association held at Cork in August 1843; and the brief notice in that part of the 'Report' of the Association for that year which contains the 'Transactions of the Sections' (p. 71) seems to be the first printed announcement of its occurrence. In May 1845 the same gentleman made known (Ann. & Mag. Nat. Hist. xv. p. 308, note) a few more particulars of the fact, as above given; and in January 1846 Dr. Burkitt presented the skin to the Museum of Trinity College, Dublin, where, however, it is unfortunately not at the present time forthcoming." By Thompson, Yarrell, and others this specimen was most erroneously referred to the "Cudor" of Levaillant; but fortunately their careful descriptions, together with a coloured drawing of the Waterford bird preserved by Dr. Burkitt, enabled Professor Newton to correct this mistake; and it is to be remarked that the "Cudor" (*P. aurigaster*) is a species which inhabits Java. The present species has not been elsewhere met with in Europe, nor even in North Africa, it being a South-African species, apparently confined to the Cape colony. Levaillant (*l. c.*) says that it is "extremely common near the Cape of Good Hope, and especially in Swart Land, where it is called *geet-gat*, or yellow vent. It feeds on berries and insects, and is a very noisy bird." Mr. E. L. Layard, who met with it in South Africa, says (B. of S. Afr. p. 138) that they "are found in great abundance in the neighbourhood of Cape-town, and indeed throughout the whole colony. They migrate according to the fruit-season, and are especially partial to figs and grapes. They also feed largely on the berries of the 'Persian lilac;' and when that tree is in fruit any number might be shot by a person lying in ambush near. When feeding they keep up a continued chattering; and as they usually go in flocks of ten or fifteen in number, their presence is soon detected."

I do not possess the eggs of this species, and have no other information respecting its nidification beyond that published by Mr. Layard, who writes as follows:—"These birds conceal their nests so skilfully that they are rarely detected, notwithstanding their numbers. It is composed of rootlets, lined sometimes with hair and feathers, and is generally placed in the fork of a tree or large bush. The eggs, three or four in number, are a lovely pale pink, densely spotted and blotched with dark pink and pale purple, presenting a most beautiful appearance: axis $11'''$, diameter $7\frac{1}{2}'''$."

The specimen described, and figured on the same Plate with *P. xanthopygus*, is one from the Cape of Good Hope, in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Cape of Good Hope, 1871 (*Butler*).

E Mus. G. E. Shelley.

a, b. Cape of Good Hope (*Butler*). *c*. Wellington, Cape colony, January 6th, 1874 (*G. E. Shelley*).

Family ORIOLIDÆ.

Genus ORIOLUS.

Turdus apud Brisson, Orn. ii. p. 320 (1760).
Oriolus, Linnæus, Syst. Nat. i. p. 160 (1766).
Coracias apud Scopoli, Ann. I. Hist. Nat. p. 41 (1769).

It is rather difficult to decide where the Orioles should be placed; for in many respects they stand more isolated than most of the other genera. Macgillivray places *Oriolus* between *Sturnus* and *Cinclus*, Keyserling and Blasius between *Motacilla* and *Monticola*, Degland and Gerbe between *Cinclus* and *Pycnonotus*, G. R. Gray between the Artamidæ and the Pittidæ, Professor Sundevall between *Pycnonotus* and *Muscicapa*, Professor Newton between the Muscicapidæ and the Cinclidæ, and Mr. Sharpe amongst the Corvidæ, between the Paridiseidæ and the Dicruridæ. I was at first somewhat doubtful whether I was correct in placing it where I have; but on referring to Professor Parker he has fully indorsed the view I have taken. Only two species belong to the genus, one of which (*Oriolus galbula*) inhabits the Western Palæarctic Region, the western portion of the Eastern Palæarctic Region, and the Ethiopian Region down to Natal, and the other (*Oriolus kundoo*) inhabits the Indian Region.

The Orioles inhabit gardens and groves, more especially where non-evergreen trees prevail; and with us they are migrants, leaving for the south at the approach of winter. They are excellent songsters, and have a clear, loud, flute-like note. They feed on insects and fruits, more especially on the former. Their flight is rolling and heavy, but swift; and they affect the tops of the large green wood-trees. Their nests are suspended in the fork of a branch, are constructed of grass-straws firmly twisted round the branch, and are open, cup-shaped. Their eggs are glossy and white, spotted with deep brown. The young birds when in their first plumage somewhat resemble the adult female.

Oriolus galbula, the type of the genus, has the bill moderately long, stout, nearly straight, the tip of the upper mandible distinctly notched; nostrils basal, oblong; gape furnished with a few short bristles; wings long, the first quill short, the second shorter than the fourth, the third longest; tail moderately long, nearly square or slightly rounded; tarsus short, covered in front with four plates and three inferior scutellæ; toes moderate, covered with large scutellæ; claws moderate, arched, acute, laterally grooved.



GOLDEN ORIOLE
ORIOLUS GALBULA.

ORIOLUS GALBULA.

(GOLDEN ORIOLE.)

Turdus oriolus, Briss. ii. p. 320 (1760).
Oriolus galbula, Linn. Syst. Nat. i. p. 160 (1766).
Coracias oriolus, Scop. Ann. I. Hist. Nat. p. 41. no. 45 (1769).
Le Loriot, Montb. Hist. Nat. Ois. ii. p. 254, pl. xvii. (1785).
Coracias galbula (L.), Bechst. Gemeinn. Naturg. Vög. Deutschl. i. p. 1292 (1805).
Oriolus galbula, var. *virescens*, Ehr. Symb. Phys. fol. *z* (1829).
Oriolus aureus, C. L. Brehm, Vög. Deutschl. p. 156 (1831).
Oriolus garrulus, C. L. Brehm, op. cit. p. 157 (1831).

Loriot, French; *Papa-figos*, Portuguese; *Oropendola*, Spanish; *Rigogolo*, Italian; *Taira safra*, *Taira hadra*, Maltese; *Sufer*, Arabic; *Tair-es-sfar*, Moorish; *Goldamsel*, *Pirol*, *Wiedewall*, *Witwell*, German; *Wielewall*, Dutch; *Guldpirol*, Danish; *Sommargylling*, Swedish; *Kuhankeittäjä*, Finnish; *Ivolga*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 26. fig. 1; Werner, Atlas, *Omnivores*, pl. 15; Kjærb. Orn. Dan. taf. xiii.; Frisch, Vög. Deutschl. taf. 31; Fritsch, Vög. Eur. taf. 14. figs. 7, 8; Naumann, Vög. Deutschl. taf. 61; Sundevall, Svensk. Fogl. pl. 67. fig. 2; Gould, B. of Eur. pl. 71; id. B. of G. Brit. ii. pl. 31; Schlegel, Vog. Nederl. pls. 113, 114; Roux, Orn. Prov. pls. 125, 126, 127.

♂ *ad.* pulcherrimè flavus, loris, alis et caudâ nigris: remigibus vix sulphureo extùs marginatis et apicatis: margine alari et subalaribus flavis, tectricibus primariorum eodem colore terminatis: rectricibus externis valdè, internis minùs et centralibus vix flavo apicatis: rostro sordidè rufescente: iride rufescente: pedibus plumbescenti-griseis.

♀ *ad.* mari dissimilis, suprà flavicanti-viridis, subtùs alba fusco striata, pectore et hypochondriis flavo lavatis, crisso et subcaudalibus flavis, alis ut in mare sed brunnescentioribus, secundariis et tectricibus alarum viridi-flavo lavatis: caudâ ut in mare picturatâ, sed rectricibus in pogonio externo omnino nigris: loris nigricanti-fuscis.

Adult Male (Malta, April 21). Entire plumage, except the wings and tail, rich golden yellow; a broad stripe from the base of the bill to the eye, covering the lores, deep black; wings jet-black, the quills tipped and externally narrowly margined with yellowish white or sulphur-yellow; edge of the wing and under wing-coverts rich yellow, the primary coverts being broadly terminated with the same colour; tail black, broadly terminated with yellow, the outer rectrices being more broadly, and the inner ones less marked with this colour, the central rectrices black, only narrowly tipped with yellow; bill dull reddish; iris blood-red; legs lead-grey. Total length about 9–9·5 inches, culmen 0·95, wing 5·9, tail 3·6, tarsus 0·85.

Adult Female (Piedmont, May). Differs considerably from the male; upper parts (excepting the wings) greenish yellow or apple-green, the patch in front of the eye dull brownish black; wings as in the male, but duller and browner, the edgings being pale sulphur-yellow; secondaries and wing-coverts washed with dull greenish yellow; tail as in the male, except that the yellow markings are only on the inner webs, the outer webs of the feathers being blackish; underparts white, on the lower throat, breast, and flanks washed with bright yellow, the vent and under tail-coverts being entirely yellow; throat, breast, and flanks more or less distinctly streaked with blackish brown.

Young Male. Closely resembles the female, but is only a little more yellow in tinge of plumage.

Nestling (Belgium). Upper parts greyish, tipped with yellow; underparts, where the feathers have grown, white, tinged with yellow and finely streaked with blackish; the short wings and tail have much the same character as those of the adult, but the quills are edged and tipped with yellowish.

Obs. In the series I have examined I find scarcely any seasonal variation in the colour of the old birds, as an old male shot on the 4th September is as richly coloured as any I have. The moult appears to take place in August, and therefore this bird would be in full plumage. The young male appears to take at least two years before it attains the full adult livery, and it is therefore to be found in all stages between that and the plumage of the female, which it wears in its first year. A very old female in Captain Shelley's collection has the entire underparts yellow, almost as rich in colour as in the male, but streaked with blackish, and the upper parts are coloured as in ordinary adult females.

The richly coloured European Oriole inhabits Central and Southern Europe generally, being but a rare straggler to Northern Europe. Eastward it occurs as far as Turkestan, and in Africa it has been met with as far south as Damara Land and Natal.

With us in Great Britain it is a rare straggler; and though it is stated to have bred in England on several occasions, it must be looked on as being one of our rarer visitants. Professor Newton (Yarr. Brit. B. ed. 4, i. p. 236) says that "it appears almost every spring in the southern and eastern counties, from Cornwall to Norfolk—and especially often in the first and last of them, Sussex, Kent, and Suffolk being the next in order of abundance. In the west of England it has occurred by forty at a time; but most generally it appears in pairs, though the female, from her less conspicuous plumage, often escapes observation." Mr. Gatcombe informs me that it is said to have occurred in the Saltram woods, the seat of the Earl of Morley, near Plymouth, and a very fine old female in his possession was killed at Millbrook, near Mount Edgcumbe; and Mr. Cecil Smith speaks of it as being an occasional visitor to Somersetshire, but he does not know that it has ever attempted to breed there. Mr. Stevenson records numerous instances of its occurrence in Norfolk; but in the north of England its occurrences are rarer, and in Scotland it has only been met with on a few occasions. Dr. Fleming first records it, a specimen having, he says, been obtained on the island of Arran in 1807; a second was taken near Edinburgh; and a third was obtained in Berwickshire. Mr. Robert Gray mentions that a specimen was shot near Kirkaldy on the 22nd April, 1870, and another late in March at Loch Torridon, in Ross-shire. He also states that an example was shot in the Isle of Man in June 1868. In Ireland it has, according to Thompson, been recorded from Kerry, Cork, Waterford, Wexford, Wicklow, and Down; and Mr. W. A. Hackett records the occurrence of several specimens in the county Cork in April 1870. It is stated to have bred in various parts of the south of England; and I cannot

do better than transcribe what Professor Newton has (*l. c.*) written on this subject, as follows:— "In Dorsetshire Mr. Octavius Pickard-Cambridge writes (Zool. p. 4366) that a male bird was constantly seen in a garden at Bloxworth for more than a week in May 1854, and though a large extent of woodland and orchard adjoins the place, yet nothing came of it. Some nests, however, are reported to have been found, and especially in Kent. Thus Mr. J. Pemberton Bartlett states (Zool. p. 824) that in June 1836 one was discovered in an ash plantation near Ord, from which the young were taken; but, though every care was shown them, they did not long survive their captivity. Mr. J. B. Ellman says (Zool. p. 2496) that at the end of May 1849 a nest was, with the owners, obtained near Elmstone. It was suspended from the extremity of the top branch of an oak, was composed entirely of wool, bound together with dried grass, and contained three eggs. Mr. Hulke, in 1851, also recorded (Zool. p. 3034) a third, of which he was told that it was found about ten years previously in Word Wood, near Sandwich, by a countryman, who took the young and gave them to his ferrets; and Mr. More, on the authority of Mr. Charles Gordon, mentions one at Elmstead, adding that the bird appeared again in the same locality in 1861. Mr. Howard Saunders and Lord Lilford have informed the editor that in the past summer (of 1871) they each observed, in Surrey and Northamptonshire respectively, a bird of this species, which probably had a nest. Messrs. Sheppard and Wheatear speak of a nest said to have been found in a garden near Ormsby, in Norfolk; but the eggs formerly in Mr. Scale's collection, which it was thought were taken in that county, were really brought from Holland, and the Editor is not aware of any collector who can boast the possession of eggs of this species laid in Britain." Mr. J. E. Harting records (Our Summer Migr. p. 268) a recent instance of a pair having bred in the Isle of Thanet. This pair took up their quarters in Dumpton Park, Isle of Thanet, the seat of Mr. Bankes Tomlin, last year (1874), where they were carefully protected by the proprietor, and were therefore enabled to rear and take away their young in safety. Mr. Harting visited Dumpton Park on the 12th July and inspected the nest, the young being then hatched.

Although a rare species in Scandinavia, it has once occurred as far north as Iceland, where, on the north coast, a specimen was, according to Dr. Kjærbölling, found dead in December 1843.

I find no record of its occurrence in Norway; and in Sweden it is a rare species. Professor Sundevall, who states that single birds have now and again been met with in Sweden, remarks that they are doubtless only stragglers from the countries on the south side of the Baltic or from Finland. Meves says that in June 1847 he saw a young male at Ottenby, and enticed it within fifteen paces by imitating its note. In Finland it is common in the southern parts of the country, where I used to see it in the vicinity of Wiborg almost daily; for a pair bred within gunshot of the house where I lived. It does not, however, range far north, as, according to Von Wright, the northern limit of its range is about Kuopio and the vicinity of Helsingfors. In Russia proper it would appear to straggle as far north as Archangel; for Messrs. Alston and Harvie-Brown say that they saw an example in Mr. Heinrich's collection there. Mr. Sabanäeff informs me that it is tolerably common in the Smolensk Government, and also in Tula, but is only a rare species in the south-eastern portion of the Vologda Government. In the Ural he says it is doubtful if it ranges further north than about 58° N. lat.; but Von Middendorff states that on the Kama it occurs in 60½° N. lat.

Throughout North Germany it is a common summer visitant, and is generally distributed throughout the country; but, according to Borggreve, it does not ascend higher than 1000 feet above the sea-level. In Western Germany I saw it almost everywhere in suitable localities, and found it breeding on the Rhine. It is rare in Denmark, but less so in the Duchies than in Denmark proper, in which latter part it has, Kjærbölling says, only once been shot.

In Holland, Mr. Labouchere informs me, it is common from the early part of May to the end of August, and appears to have increased in numbers during the last ten years; and in Belgium and France it is a very generally distributed and common species during the summer season. Both Professor Barboza du Bocage and the Rev. A. C. Smith state that it is common in Portugal; and the latter remarks that, strange to say, it had not arrived in that country in the middle of May. In Spain it appears to be common: Mr. Howard Saunders speaks of it (Ibis, 1871, p. 221) as being "abundant in spring and summer, resorting in Andalucia to the thickest pine-woods for shelter from the sun, whence it appears rarer than it really is;" and Colonel Irby says that it arrives at Gibraltar between the 4th and 21st of April and as late as the 14th and 15th of May. Some few remain to breed near Gibraltar; but most pass on further north.

Passing eastward I find it recorded as numerous in Savoy and Italy, breeding in the northern portions of the latter country; but in Sicily and Sardinia it is principally a migrant, though some few individuals remain to breed. Mr. C. A. Wright records it as a regular spring visitant to Malta, where it would, he believes, breed were it not disturbed. Lord Lilford met with it in Corfu and Epirus, where it arrives about the middle of April, but only a few remain to breed, the rest passing northward. In continental Greece it is stated to pass in large numbers, and a few doubtless remain to breed in suitable localities; but, Dr. Krüper adds, there is no definite proof of any nest having been found. It arrives, he states, in Greece and Asia Minor about the middle of April: it arrived at Smyrna in 1864 on the 16th of April, and in 1872 on the 23rd of April; at the Parnassus, in 1866, on the 18th of April; in Attica, in 1867, on the 18th of April, and in 1873 on the 28th of April. Two specimens in the Athens Museum were shot on the 18th of April, 1859. The autumn passage commences late in July and in August, and lasts until about the middle of September; and Dr. Krüper shot a female near Smyrna, in 1871, as late as the 6th of September. In Southern Germany it is generally distributed in suitable localities on the plains, but, as elsewhere, it is not found in the mountainous districts. The late Mr. Seidensacher informed me that near Cilli, in Styria, it was, he had remarked, one of the latest summer visitants to arrive, and one of the earliest to leave. It arrives there from the 21st of April to the 1st of May, and deposits, late in May, its four or five eggs, nesting usually in firs, oaks, and thorn-bushes. In all the countries bordering the Danube, where there are suitable localities, it appears to be tolerably common; and I have received at different times many specimens from Turkey. Professor Nordmann states that it is found near Odessa from May to September; and Dr. Radde, who observed the present species in Southern Russia during passage, remarks that in May they were arriving from the south-east and passing onwards towards the north-west. In Asia Minor it passes and repasses at the two seasons of migration, and he thinks it not impossible that it may breed near Smyrna; and as regards its occurrence in Palestine, Canon Tristram writes (Ibis, 1867, p. 364) as follows:—"It is rather a bird of passage than a summer resident. Numbers of these splendid birds were to be seen for a fortnight from

the middle of May; but they rapidly disappeared; nor did I ever meet with the nest, though twice in June I found pairs of Orioles evidently settled down in their breeding-habitat." In Africa it is a tolerably common winter visitant, ranging far south. Captain Shelley states (B. of Egypt, p. 156) that it "passes through Egypt and Nubia on its spring and autumn migrations, but does not remain to breed in the country. In spring it arrives about the middle of April, when it is rather plentiful among the thicker-foliaged trees." Von Heuglin says that it arrives in scattered parties in the middle of April, and again in August and September; and, he adds, it does not appear to pass the equator. He met with a family in September 1857 at Asab Bay, and he saw it in October in Adel Land in Abyssinia, on the White Nile, and on the Somali coast. Males in full plumage are, he says, very rare in North-east Africa. Dr. Brehm also writes (J. f. O. 1854, p. 75) respecting its range in North-east Africa as follows:—"I observed it, in 1848, on the 12th September in Upper Nubia, below Berber (17½° N. lat.); in 1849, on the 3rd and 8th May on Lake Mezaleh; in 1850, on the 6th September near Chartum, on the 12th and 18th September on the Blue Nile; in 1851, on the 17th September in the province of Dongola, and even as late as the 10th October in Upper Egypt." In North-west Africa it is also found, during passage and in the breeding-season. Loche writes that it breeds in Algeria, arriving in April and leaving late in August. Near Tangier it would appear to be only a migrant; for Colonel Irby says that, according to Favier, it "crosses the Straits in great numbers during April and May, returning in July, August, and September." It passes as far south in Africa at least as Damara Land. Verreaux, who records it from Casamanze, says that he frequently obtained it in South Africa. Mr. Gurney mentions that Mr. Sharpe possessed a specimen obtained by Mr. Andersson at Ondonga; and Mr. Andersson himself states (B. of Damara Land, p. 124) that it "arrives in Damara Land with the return of the rainy season, but is comparatively rare, and very few adult birds are seen." It was obtained by Mr. Ayres in Natal; and, according to Hartlaub, it is also found in Madagascar. It would appear also to occur on the Azores; for Mr. Godman saw a half-plucked specimen in Flores which, he says, he does not hesitate to attribute to this species.

To the eastward it occurs as far as Sindh and Turkestan, in which latter country Dr. Severtzoff informs me it meets with *Oriolus kundoo*, its eastern representative. Mr. Blanford says that it abounds in Persia in the summer, and breeds throughout the higher parts of the country. The large gardens and orchards which surround many of the higher Persian villages, at elevations of above 6000 feet, afford an admirable habitat for this bird during the breeding-season. Dr. Severtzoff also informs me that it breeds throughout Turkestan.

The Golden Oriole is a shy and unobtrusive bird; and, in spite of its gaudy coloration, it is by no means a conspicuous or easily observed species. It affects evergreen groves and woods, where it keeps to the dense foliage, and appears to be a restless, uneasy bird, continually moving from place to place. When in Finland, now nearly twenty years ago, I had very ample opportunities of observing this species; for a pair bred in a garden, and were generally to be found in the high trees of a fine old avenue in front of the windows of the house in which I was living, and the clear, bold whistle of the male and his mewing call could generally be heard. In spite of being unmolested they were shy, and used to hide amongst the dense foliage of the tree-tops, seldom descending into the bushes, and were usually observed flying from one grove to another.

I noticed that the flight was rolling and heavy, but swift; and it appeared to avoid taking long flights. I have since then seen the Golden Oriole in many countries, and have always found it a shy bird, difficult to observe or approach. During the pairing-season they may be seen chasing each other from grove to grove; and at that season especially it is a quarrelsome bird, not only as regards its own species, but it will chase away other birds that approach its chosen haunts. For any one who can closely imitate its note it is no difficult matter to approach within a short distance of it, or rather to entice it within range. Amongst the German foresters I have found many who can immediately entice an Oriole within range; but the bird has so good an ear that, although it will at first answer the call, it soon discovers the trick played on it, should a single note be false, and it is then hopeless to try and approach it. I can call this species tolerably well; but an old Oriole will generally find me out before he gets within range. Mr. Carl Sachse, however, is an adept in calling an Oriole; and I have been with him when he has enticed one within a few yards of the place where we were concealed. On one occasion he got three Orioles within range at the same time, which, considering the general wariness of this bird, is a tolerably good proof of his power of mimicry. The note of the Oriole is a clear loud whistle, varied somewhat so as to resemble the syllables *huidleo*, *huitidleo*, *huidleo*; so clearly is the tone given. From its note many of its local names, such as *Vogel Bülow*, *Schulz von Bülow* in Germany, and *Kuhankeittäjä*, as it is usually called by the Finnish peasants, are derived. Besides its clear whistle, it has a peculiar harsh mewing call-note; and its note of alarm is a harsh *chrrr*. During the pairing-season it utters what is apparently a note of affection, resembling the syllable *hio*, by mimicking which, together with its whistle, it can generally be enticed within range. Mr. Carl Sachse sends me the following note on its habits as observed by him in Rhenish Prussia, viz.:—"With us it inhabits the groves where there are small ravines through which water flows, especially beech- and oak-groves, and where the undergrowth is dense. It arrives at rather irregular times, according to the season. It arrived earliest in 1863 and 1865, in both of which years it was seen as early as the 18th April; whereas in 1875 the first was seen on the 5th May. About the middle of August, or from then to the early part of September, it leaves us again; and, as may be almost taken for granted, it raises only one brood in the season. It is a wild, restless, quarrelsome bird; in the pairing-season bitter encounters take place, and I have seen four or five together fighting in the air. Long before sunrise its clear flute-like note may be heard; but during the day-time it whistles less frequently. It ranges over a considerable tract; and hence its nest is hard to find, except when it breeds in the gardens. It may be enticed, by imitating its note, to within a few yards' distance, but is hard to shoot; for it hops from twig to twig in the dense foliage, uttering its song in a low tone. Usually a male and a female arrive together, sometimes, however, three or four individuals; and then they immediately commence quarrelling."

The food of the present species is varied according to the season of the year, but it is chiefly insectivorous when insect food is to be had, and more especially so in the spring, before any fruit is ripe. It devours all sorts of insects that inhabit the woodlands, but is especially fond of the large green caterpillars which are found on the leaves of the trees. It also feeds largely on berries and fruit when in season, but is not more destructive in a garden than many other birds, and amply repays any mischief it may do by the number of noxious insects it kills. It is most

partial to cherries, of all garden-fruits, but will also feed on currants, and especially on mulberries. Mr. Sachse informs me that it often does much damage amongst the cherries; and when it has once or twice visited a cherry-tree and finds the fruit to its liking, it may be shot, whilst feeding there, without much difficulty.

In Germany, where I have several times found its nest, it commences nidification soon after its arrival in May, the place chosen being usually in a dense wood or grove, the nest being placed on the upper part of a tolerably small tree, and neatly suspended amongst the smaller branches. It is always placed in the fork of a small branch, the nest being basket-shaped, and neatly woven to the slender branch on each side, and is one of the most artistic structures amongst the nests of our European birds. Both male and female cooperate in the construction of the nest. One I have before me is built in the fork of a slender oak branch, and is made of strips of pliable bark, straws, dried grass-bents, &c., closely and firmly constructed, and carefully twisted and woven round the branch. The outside is ornamented with strips of paper-like white birch bark; and the interior is lined with fine grass-bents. In size it measures 4 inches one way and $5\frac{1}{2}$ the other in outside diameter, the inside cup measuring 3–$3\frac{1}{2}$ inches in diameter and $2\frac{1}{2}$ inches in depth. As the nest is not built until the foliage is fully developed, it is by no means easy to find it.

The female deposits four or five eggs, late in May or early in June, and incubation lasts fourteen or fifteen days, the male assisting his mate in the tedious work, so as to allow her to search after food and to get some rest. The eggs are glossy white, more or less spotted with deep reddish brown, and marked with a few pale purplish brown shell-blotches. Those in my collection vary in size from $1\frac{4}{40}$ by $\frac{34}{40}$ inch to $1\frac{12}{40}$ by $\frac{35}{40}$ inch.

When the young are hatched they are carefully tended by their parents, and fed with insects, especially caterpillars, a by no means easy task, as they are extremely voracious. The young grow quickly; for I examined a nest this spring which contained freshly hatched young, and on revisiting it a week later they had already got a tolerably close crop of feathers, those in the wings and tail being pretty well developed. The young do not, however, leave the nest until they are fully fledged, and soon learn to find food for themselves. Mr. Sachse informs me that they can be reared without much difficulty in confinement, the best food for them being the larvæ of ants; but as cage-birds the males never assume so rich a plumage as is worn in a state of nature, but resemble old females.

The specimens figured are the adult male and female above described, and are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, pull. Belgium (*Dubois*). *b*, ♀ *ad.* Silesia, 1870 (*O. Finsch*). *c*, ♂ *ad.* France (*Fairmaire*). *d*, ♀. Fontigny, France, June 1st, 1868 (*J. E. Harting*). *e*, ♂ *juv.* France, August 1861 (*Harting*). *f*, ♂, *g*, ♀. Piedmont, May 1868 (*Salvadori*). *h*, ♂. Malta, April 21st, 1866 (*C. A. Wright*). *i*, ♂ *juv.*, *k*, ♀. Seville (*Ruiz*). *l*, ♀ *ad.* Wiborg, Finland, July 7th, 1856 (*H. E. D. ipse*). *m*, ♂. Constantinople, September 4th, 1869 (*T. Robson*). *n*, ♂ *ad.* April. *o*, ♂ *juv.* May, Smyrna. *p*, ♀. Alexandria (*S. Stafford Allen*).

E Mus. G. E. Shelley.

a, b, ♂, *c*, ♀. Egypt, April 1870. *d*, ♀. Egypt, May 5th, 1870. *e, f*, ♀. Egypt, 1871 (*G. E. S.*).

Family LANIIDÆ.

Genus LANIUS.

Lanius, Linnæus, Syst. Nat. i. p. 135 (1766).
Enneoctonus apud Boie, Isis, 1826, p. 973.
Collurio apud Kaup, Natürl. Syst. p. 40 (1829).
Phoneus apud Kaup, op. cit. p. 33 (1829).
Collyrio apud Sykes, Proc. Zool. Soc. 1832, p. 86.
Otomela apud Bonaparte, Rev. Zool. 1853, p. 437.
Leucometopon apud Bonaparte, tom. cit. p. 438.

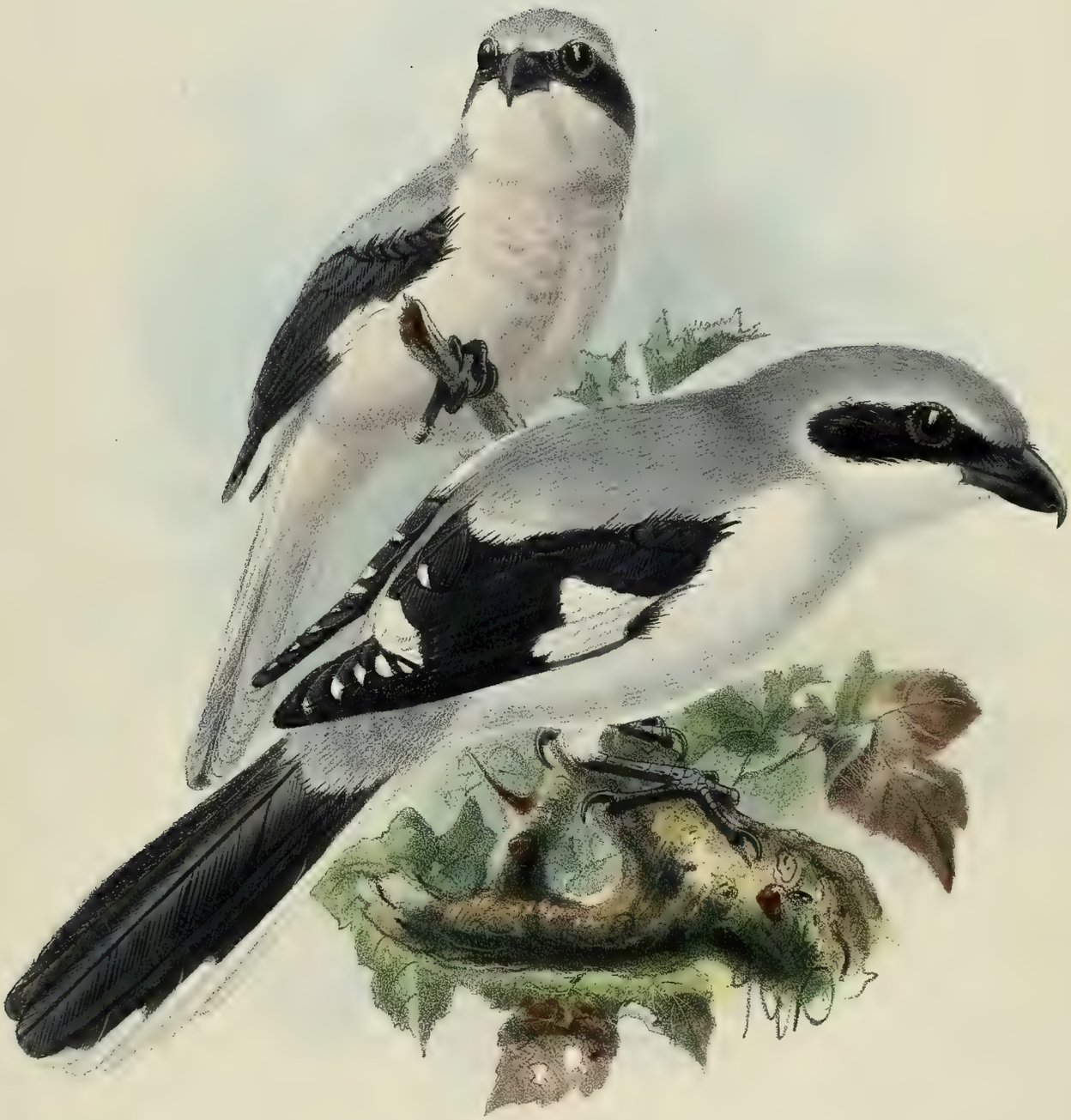
The Shrikes are certainly not very distantly allied to the Flycatchers, though some authors have placed them close to the Crows: Degland and Gerbe, for instance, place the Laniidæ between the Corvidæ and the Sturnidæ, where, so far as I can judge, they are quite out of place; and I have followed most of the later authorities in assigning them a position close to the Muscicapidæ, separated from that family only by the Ampelidæ, to which they are also very closely related.

The Shrikes inhabit the Palæarctic, Ethiopian, Oriental, and Nearctic Regions. Nine species are found within the limits of the Western Palæarctic Region, eight of which breed there and are by no means uncommon within that region; but the ninth, *Lanius isabellinus*, is a rare visitant from the Eastern Palæarctic Region.

The Shrikes are strong, powerful birds, well able to defend themselves against even the larger birds of prey; and they frequently attack, kill, and devour smaller birds and mice, feeding also on frogs, lizards, and large insects. They are peculiar in their habit of spitting their prey on thorns, or fixing it in the fork of a branch, from which they have obtained the name of Butcherbirds.

Although their usual note is not musical or pleasing, they possess the power of mimicry to a considerable degree, and are able to modulate their voice to a great extent, and to imitate the notes of several other species. They build open nests of twigs and plant-stems, lined with finer plants, hair, wool, or feathers, rather large for the size of the birds, but tolerably well constructed. They differ a good deal as regards the coloration of their eggs, the Grey Shrikes having eggs greenish or greyish white in colour blotched and spotted with purplish grey, wood-brown, and olivaceous, whereas the smaller Shrikes deposit white eggs tinged with greenish and blotched with lilac and olivaceous, or warm cream-coloured or salmon-coloured, marked with red and lilac blotches and spots. In some species the males and females resemble each other very closely, whereas in others the sexes are very dissimilar.

Lanius excubitor, the type of the genus, has the bill short, thick, higher than broad at the base, upper mandible much hooked at the point and strongly toothed; nostrils basal, roundish, partially covered with bristly feathers directed forward; gape furnished with stiff bristles; wings moderate, broad, the first quill short, the second rather longer than the sixth, the third longest; tail long, much rounded; legs moderately short, the tarsus covered in front with six large plates and three inferior scutellæ; toes rather small, claws long, arched, laterally grooved, extremely acute.



LANIUS EXCUBITOR.
X

LANIUS EXCUBITOR.

(GREAT GREY SHRIKE.)

Lanius excubitor, Linn. Syst. Nat. i. p. 135 (1766).
Collyrio excubitor, Gray, Handl. of B. i. p.390 (1869).
Lanius cinereus, Leach, Cat. Mamm. and Birds in Brit. Mus. p. 19 (1816).

Pie-grièche grise, French; *Pica griega cenicienta*, Spanish; *Averla maggiore*, Italian; *grosser Würger*, German; *Graa Tornskade*, Danish; *Större Törnskata*, *Var fogel*, Swedish; *Varsler*, Norwegian; *Klaauwier*, Dutch.

Mas pulchre cinereus: fronte, linea superciliari genisque albis: fascia orbitali per oculum eunte usque ad regionem paroticam producta, nigra: scapularibus pure albis: dorso postico cinereo, uropygio albo: tectricibus alarum nigris, minoribus cinereo marginatis: remigibus brunnescenti-nigris, extus ad basin albis, duplicem fasciam alarem formantibus, secundariis etiam albo terminatis: cauda nigra plumis omnibus versus apicem albis, duabus mediis paullulo, proximis gradatim albo magis terminatis usque ad extimas fere omnino albas ad basin tantum nigras: subtus albus, hypochondriis paullo cinerascentibus: rostro et pedibus nigris.

Fem. mari similis, sed subtus paullo cinerascens et interdum fasciis obsoletis transfasciata.

Male. Above generally light blue-grey; forehead, extending backward over the eye, pure white; lores, feathers under the eye, and ear-coverts black; scapularies blue-grey, conspicuously edged with white; wing-coverts black, the least ones for the most part grey, the primary coverts and occasionally some of the greater coverts narrowly edged with greyish white; primaries black, white at the base on both inner and outer webs; secondaries black, the outermost white at the base on both the inner and outer web, thus forming a double bar on the wing; the secondaries conspicuously, and the primaries occasionally, tipped with white, the latter sometimes narrowly edged with the latter colour on the outer web; rump and upper tail-coverts greyish white; tail black, tipped with white, the latter colour gradually predominating towards the outer feathers, the two outermost being almost entirely white; cheeks and the whole of the under surface of the body pure white; legs slender, dark brownish black; bill black. Total length 9·5 inches, culmen 0·7, wing 4·4, tail 4·0, tarsus 1·0.

Female. Similar to the male, but the underparts greyish and exhibiting slight traces of transverse vermiculations.

Young. Much duller in plumage, the black parts being mixed with brown, the underparts dirty greyish white; bill and feet brown.

The distinguishing character by which the Grey Shrike of Europe may be recognized from all its congeners appears to be the double white bar on the wing, which is caused by the basal half of the secondaries being white as well as the primaries, and so a double band is formed. This second bar is assumed gradually, and is more fully developed in adult birds, though traces of it can in most cases be discovered on a careful examination of the bases of the secondary quills.

Further characteristics of the adult seem to be a hoary forehead and eyebrow, and a greater extent of white on the lower part of the back, and especially on the tail-feathers; the older the bird the greater the extent of white on the outer rectrices, so that sometimes the outermost feathers are pure white. Some examples have a very distinct tinge of pink on the breast, as portrayed in the hinder figure of our Plate; this, again, seems to be a character of age, and not sex, as we have seen males and females both tinged with this pink colour.

We have not yet succeeded in identifying the bird called by Pallas *Lanius major* (Zoogr. Rosso-Asiat. i. p. 401), from Siberia. In our recent paper on the Grey Shrikes (P. Z. S. 1870, p. 590), we stated our belief that this species might ultimately prove to be the North-American *Lanius borealis*, basing our opinion on the cross-barring of the breast, to which Pallas draws particular attention, and which is one of the peculiar characteristics of the North-American species. Lately, however, we procured, through the kindness of M. Jules Verreaux, a specimen of a Grey Shrike which had been forwarded to M. Taczanowsky, of the Museum of Warsaw, by MM. Dybowsky and Parrex. The plumage of this bird is so extraordinary as to merit a short description:—

Male, killed on the southern portion of Lake Baikal. General colour grey, everywhere pervaded on the upper surface with an ashy-brown tint, except on the lower part of the back, which is clear grey shading into pure white on the rump, the upper tail-coverts grey, transversely vermiculated with ashy brown; forehead and a narrow superciliary line whitish; ear-coverts dusky black; scapulars white; wing-coverts dusky black tipped with buff; secondaries tipped with whitish, some of these tips obsoletely vermiculated, both the primaries and secondaries externally white at their bases, forming a very distinct double alar bar; tail-feathers black tipped with white, the latter colour gradually predominating toward the outermost feathers, which are almost entirely white; cheeks and entire under surface of the body greyish, everywhere strongly vermiculated with greyish brown; abdomen and under wing- and tail-coverts white, the latter, as also the thighs, marked with obsolete vermiculations; feet black; bill brownish black, yellow at base. Total length 10 inches, culmen 0·7, wing 4·55, tail 4·4, tarsus 0·9.

It may be presumed that we have here the true *Lanius major* of Pallas; and if so, the next question is, to which species is it referable? This cannot be answered without a larger series of the Siberian bird being examined; but at present we are inclined to believe that the species is distinct from both *L. excubitor* and *L. borealis*, resembling the latter in the ashy-grey hue of the upper and in the strongly marked vermiculations of the under surface, but possessing the double alar bar of *Lanius excubitor*. The name of *major* scarcely appears to be justified; for a series of Great Grey Shrikes, from Europe, show great variation in size, and some of them are larger than the Siberian bird. The tarsus in the latter is $\frac{1}{10}$ inch shorter than in the European species.

Lanius excubitor is one of the typical species of the Western Palæarctic Region, extending its range over the northern and central portions, and it is known to occur in very high latitudes. To the eastward its habitat is not yet clearly defined, while the records of its occurrence in Southern Europe must also be received with caution. We believe that in this quarter *Lanius lahtora* has been mistaken for it.

In the British islands it is by no means an uncommon visitant in autumn and winter; but there is no authentic evidence of its having bred with us, and we are glad to see that Mr. A. G. More, in his paper on the Geographical Distribution of Birds in Great Britain during the

nesting-season, holds the same opinion. We are indebted to Dr. Edward Hamilton, V.P.Z.S., for the accompanying note as to its occurrence in Bedfordshire:—"On the 25th of November, 1848, I observed one of these birds perched on the top of a decayed ash tree in the Litany, a marshy place studded with small bushes, about three miles from Dunstable, Bedfordshire. After watching him for some time, he flew to a bush about four hundred yards from the tree, when I was able to creep up within a short distance and shoot him. He proved to be a fine old male; and I believe this is the first recorded instance of the bird being killed in Bedfordshire. I watched him for at least half an hour, and did not observe any motion of the tail, as noticed by Selby in Yarrell's 'British Birds' (vol. i. p. 151). The specimen is still in my possession."

Thompson enumerates several instances of its occurrence in Ireland. It is found the whole year round in the north of France, and throughout that country appears to be not uncommon. In the north of Spain Lord Lilford states that it is met with occasionally; and the Rev. A. C. Smith has recorded it from Portugal. Malherbe refers to it in Sicily, and Lindermayer in Greece, as a bird of passage, but we are doubtful as to whether these naturalists refer to the true *Lanius excubitor* or to one of the nearly allied southern species; for notwithstanding the supposed occurrence of the species in Palestine, as recorded by Dr. Tristram (Ibis, 1867, p. 364), we find on examination that all his specimens must be referred to *L. lahtora*. Probably also the bird recorded as *L. excubitor* by Mr. C. W. Wyatt as occurring in the Sinaitic peninsula (Ibis, 1870, p. 12) is also of the latter species. We must, however, observe that Lord Lilford (Powys) (Ibis, 1860, p. 134) includes it in his list of the birds of the Ionian Islands. In Switzerland and Northern Italy this species is only a winter visitant, and is of rare occurrence in the latter country. Throughout Germany, more particularly in the north, it breeds not uncommonly; and it passes the whole winter in Luxembourg, Belgium, and the Rhenish Provinces, breeding generally. In Denmark it is not uncommon, many remaining throughout the winter; in Sweden it is found occasionally, and occurs as far north as the birch- and willow-regions extend, breeding even in Lapland. In von Wright's 'Finland's Foglar' (p. 69) it is recorded as occurring in that country during the spring and autumn migrations, though he can offer no authentic evidence as to its breeding there; but Mr. Dresser has himself shot specimens in Finland, in the month of May, with the ovaries largely developed; so that it is not improbable that it does breed in that country. Demidoff states that it is very common in Southern Russia, nesting in the gardens, some remaining throughout the winter, but the larger quantity migrating at the beginning of the cold weather and returning in the early part of April (Voy. Russ. Mérid. iii. p. 113). Pallas found it in Northern Russia, and Radde in South-eastern Siberia throughout the whole country he visited, excepting the elevated steppes of Dauria (Reis. im Süden von Ost-Sib. ii. p. 274). Messrs. Dubowski and Parrex (J. f. O. 1868, p. 333), however, state that it is found rarely in the winter at Darasun, in Dauria. In the Indian Museum, according to Messsrs. Horsfield and Moore (Cat. i. p. 162), there is a specimen from Mesopotamia. From the above notes it will be seen that the range of this species is very extended, being the northern and central representative of the genus *Lanius* in the Palæarctic Region. In the southern part of the Mediterranean basin it is replaced to the west by *L. meridionalis* and *L. algeriensis*, and to the east by *L. lahtora*, whereas in the Indian Region it never occurs, its place being taken entirely by the latter species.

A bold, fearless bird, the Great Grey Shrike brooks no intruder on the domain he has chosen for himself, and will attack and drive off even the most powerful birds of prey. During the breeding-season it is particularly watchful in ousting any Crow or Hawk from the neighbourhood of its nest. Like its American congener (*Lanius borealis*), which Dresser has often observed during the severest part of the Canadian winter, it is able to endure severe cold, and stays even in the colder countries, though not in the same locality where it has nested. Its favourite habitat is in the open fields where bushes and trees are scattered round, and it does not frequent the true forests.

In Scandinavia, where Dresser has had several opportunities of observing it, he found it frequenting the open country where a few trees were to be found, and generally saw it perching on the topmost bough of a tree, whence it could have a clear view of the surrounding country, and when disturbed it would fly off with a Magpie-like flight to the nearest elevated perch, where it would again resume its position on the highest possible place. Swampy and low districts it appears to avoid, but is often found in the hill-country; and Radde (R. im S. v. O. S. Band ii. p. 274) remarks that he found it in June 1859 on the Sajan mountains, in Siberia, on the boundary of the tree-growth, at an elevation of from 6000 to 7000 feet above the level of the sea. Its food consists of field-mice, beetles, grasshoppers, and small birds, which latter it hunts down with great pertinacity, and will even attack Blackbirds and Thrushes. Like the other Shrikes, it spits its prey on thorns, or jams it into the fork of a branch in order to tear it up with greater facility; and its larder often presents a curious appearance from the variety of its leavings. Naumann states that in summer its food consists of insects, small frogs, lizards, and blindworms, but that it is fond of young birds, and frequently robs nests.

Herr Karl Müller (J. f. O. 1868, p. 179) gives some interesting notes respecting the habits of this bird, from which we translate the following:—

"During this winter I had the opportunity of often observing a Great Grey Shrike. He lorded it over a considerable tract, and, Shrike-like, preferred the hedges and the young lime-trees skirting an avenue, where, emboldened by hunger and the severe weather, he watched for his prey, undisturbed by the passers by. I often saw him fly a considerable distance, then suddenly rise in his fight, and hover over one spot. Once when flying along he observed a mouse; he turned sharply round and, hovering, commenced a careful examination of the ground; and his watchfuless and perseverance astonished me. Now he would hover from 30 to 40 feet above the ground, now only from 10 to 15 feet; then, flying down to a small mound, he would sit with outstretched neck and eager glance, carefully surveying every spot near him, and after watching for a time would again take to wing. For more than ten minutes he waited and searched for the mouse, and then flew off to a thorn bush about 100 yards distant. But he had not given up the chase; for after a short rest he again returned to where he had first observed the animal, and repeated the search. He persevered even longer than before, and at last secured his prey by a quick surprise and several hard blows with the bill delivered as he was hopping and fluttering over it. This Shrike once attacked a Blackbird I used to feed, which had become quite tame. He came behind it as it was feeding, threw it on its back, and holding it fast with his claws gave it repeated blows on its head with his beak, and, had I not hastened to the rescue, would soon have killed it. It may not be generally known that the Shrike is attracted

to its prey not only by sight, but also by the sense of hearing. I have seen him hunt by ear after a young Lark neglected by its parents, crouched in the grass calling for food, or a young Goldfinch sitting chirping on the ground; and he is well acquainted with the difference in the call-note of young and old birds. The note of the Great Grey Shrike is harsh. Naumann (*loc. cit.*) very correctly describes it as follows:—

"'Its cry is *schäch schach*, and the call-note *truü*. On bright winter days, and particularly in spring, it may be heard uttering a sort of song composed of low notes mixed with its call-note; and it often also mixes with its song the notes of small birds. Both male and female sing, and they often call like the Skylark.'

"Its nest is generally placed at some height on a tree or large thorn bush, and is somewhat bulky and loose-looking, though the inside is carefully finished. The foundation and outside are composed of dry sticks and twigs, straws and moss; and it is lined with wool and hair."

Mr. Keulemans, our artist, gives us the following notes on the habits of this Shrike in Holland:—

"The Great Grey Shrike affects wooded localities. It is very shy during the summer, and therefore but rarely seen. A careful observer may, however, see them now and then even in places of public resort, but always high up in the trees.

"In Holland it has many local names. It is generally called Garden Magpie, or Chattering Magpie, Butcher, Clawbird, Thornsticker, Murderer, Sentinel, Garotter, &c.

"In the autumn it is often caught by birdcatchers, as it attacks their decoy birds. When they have captured one, the birdcatchers pluck out a tail-feather, which they pass through its nostrils, and cutting a slit in each end they put other feathers into each of these, after which the Shrike is liberated. This proceeding the birdcatchers call 'milling;' and when a Shrike thus treated is flying away it repeatedly tumbles over, which is called the 'mill.' All other birds obnoxious to the birdcatchers are similarly treated when they fall into their hands."

We have a series of these eggs before us from Dresser's collection, taken near Valkensvaard, in Holland, near Coblentz on the Rhine, and in Styria, which do not vary much, except in size. They measure from 1 inch by $\frac{3}{4}$ inch to $1\frac{6}{40}$ inch by $\frac{32}{40}$ inch, and are dirty white, covered with faint purplish underlying shell-markings, and dull brown overlying surface-blotches, which in some are collected towards the larger end.

According to Naumann the term of incubation is fifteen days, and the young are fed by the parents with insects until they are so fully grown as hardly to be distinguishable from their parents. He also states that they sometimes raise two broods in the year.

Mr. Wheelwright ('Spring and Summer in Lapland,' p. 271) thus describes its nesting in Quickjock, in Lapland:—

"*Lanius excubitor* was by no means common, and, though we shot five or six young birds when the season was over, we only obtained one nest, containing five eggs; this was on May 13th. We shot the old female. The nest was placed on a small fir, not high from the ground. It was one of the warmest and most comfortable nests I have ever seen, large and deep, built outwardly of dead fir branches, and lined with a very thick layer of pure white feathers of the Willow Grouse."

In the times when falconry was in vogue, and even now in some parts of the Continent, the

Great Grey Shrike is used in trapping Hawks, as it signals the approach of the Hawk by screaming loudly. These practices will be fully treated of in the account of some of the Falcons.

For the following note we are indebted to the kindness of Lord Lilford, who writes to us as follows:—

"The only country in which I have seen much of *Lanius excubitor* was in the Canton de Vaud, in Switzerland, in the years 1850–51. It is pretty common in those parts, apparently remaining the whole year. In winter it appears to live upon small birds; and I have seen it catch Titmice (*Parus major*), Lesser Spotted Woodpeckers (*Picus minor*), and once a Chaffinch (*Fringilla cœlebs*). The nest was generally placed in a fruit-tree, in the fork of a bough, at from five to ten or twelve feet from the ground. It is fond of perching on the top of a high poplar, and is very wary in winter, but tame enough and very noisy when breeding. Besides their usual hoarse shriek, these birds have rather a pleasing subdued whistle in the spring. I have received several of this species alive from Holland, but could never keep them long."

Mr. Robson has written to us as follows:—

"This species is widely distributed in Turkey, Asia Minor, and Europe, but is a scarce bird, and never more than one or two are seen at a time. Single birds are taken by bird-catchers in the autumn; they fly at birds surrounded by limed twigs, on which they become entangled, and are then easily taken. They are partial to an open country dotted with low trees and bushes, on which they sit perched, watching for their food. They are very often found in damp valleys, in marshy situations. Budik, Asia Minor, is a favourite locality for them. Single birds are shot at intervals in the winter up to the spring by sportsmen; they are never seen in summer. They feed much on beetles, mice, &c., and often fly from their resting-place and suspend themselves in the air with a loud whistling note. They vary much in their coloration, especially in the lighter or darker shades of the blue on the back and on the head. Examples of both males and females occur with undulated transverse dusky bars on the breast. As a rule the males are of a lighter blue than the females on the head and back; and I have also met with males and females which had clear white-coloured foreheads, very white scapulars, and also had larger white bands on the wing, and more white on the tail than other examples."

The descriptions and figures are from specimens in our own collection, the male being from the neighbourhood of Stockholm, procured by Professor Retzius on the 28th of February, 1855; and the female shot by Dresser near Åbo, Finland, on the 21st of April, 1861.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a. River Volga (*Moeschler*). *b*. ♂. Westphalia (*Moeschler*). *c*. Switzerland (*Moeschler*). *d*. Lombardy (*P. L. Sclater*). *e*. ♀. Piedmont, November 1869 (*Salvadori*). *f*. Europe (*Verreaux*). *g*. ♂. Siberia (*Dybowsky and Parrex*). *h*. ♂. Schleswig (*Moeschler*). *i*. Moscow (*C. Sachse*). *j*. ♂. Christiana, November 16, 1866 (*Collett*). *k*. ♂. Stockholm, February 28, 1855 (*Retzius*). *l*. ♀. Åbo, April 21, 1861 (*H. E. D.*).

E Mus. A. Newton.

a. ♂. Muonioniska, August 31st, 1855 (*A. N.*).



PALLID SHRIKE
LANIUS LAHTORA.
91

LANIUS LAHTORA.

(PALLID SHRIKE.)

Lanius excubitor, var. 3, Lath. Gen. Hist. ii. p. 7 (1822).
Lanius elegans, Swains. Faun. Bor.-Am. p. 122 (1831).
Collurio lahtora, Sykes, P. Z. S. 1832, p. 86.
Lanius lahtora, Gray & Hardw. Ill. Ind. Zool. ii. pl. 31 (1833).
Lanius burra, Gray & Hardw. op. cit. pl. 32 (1833).
Lanius minor, Rüpp. Neue Wirb. p. 33 (1835, nec Gm.).
Lanius pallens, Cass. Pr. Philad. Ac. 1851, p. 245.
Lanius algeriensis, Sclater, Contr. Orn. 1852, p. 125 (nec Less.).
Lanius aucheri, Bonap. Rev. et Mag. de Zool. 1853, p. 294.
Lanius dealbatus, Defil. Rev. et Mag. de Zool. 1853, p. 289.
Lanius leuconotus, Brehm, J. f. O. 1854, p. 147.
Lanius orbitalis, Licht. Nomencl. Av. p. 12 (1854).
Lanius excubitor, Taylor, Ibis, 1859, p. 47 (nec Linn.).
Lanius collurio, Heugl. Peterm. Mitth. 1861, p. 23 (nec Linn.).
Lanius meridionalis, Tristr. Ibis, 1862, p. 279 (nec Temm.).
Lanius hemileucurus, Finsch & Hartl. Orn. Ost-Afr. p. 329 (1869–70).
Collyrio hemileucurus, Gray, Hand-l. of B. i. p. 391 (1869).
Collyrio pallens, Gray, Hand-l. of B. i. p. 391 (1869).
Lanius leucopygus, Heugl. Orn. N.-O. Afr. p. 480 (1869).
Lanius fallax, Finsch & Hartl. Tr. Zool. Soc. vii. p. 250 (1870).

Booras, Arabic (*Tristram*).

♂ *ad.* suprà pulchrè canus, scapularibus uropygioque purè albis: tectricibus alarum minimis canis, dorso concoloribus, majoribus cum alâ spuriâ nigris: remigibus nigricantibus, primariis extùs et intùs ad basin albis, secundariis extùs albo marginatis et latè ad apicem hôc colore terminatis: caudâ nigrâ, albo apicatâ, rectricibus duabus externis omninò albis, scapis tantùm nigris, proximâ pogonio interno ferè nigro: fronte et supercilio distincto albis, loris cum regione oculari et paroticâ nigris: genis cum corpore toto subtùs albis: rostro pedibusque nigricanti-corneis: iride saturatè brunneâ.

♂ *hiem.* similis ptilosi æstivæ, sed paullò sordidior: suprà vix olivaceo tinctus.

♂ *juv.* similis mari adulto, sed paullo sordidior, subtùs magis cinereo lavatus, hypochondriis conspicuè cinereis: fronte albâ absente.

Adult Male in summer plumage. Head and back pale french-grey; a narrow frontal line, extending backwards and including the loral space, the feathers above and below the eye and the ear-coverts, which are somewhat elongated, and extend on to the sides of the neck, deep black; a faint line on the forehead above the black line, and extending over the eye, hoary white; scapulars french-grey,

broadly edged with white; least wing-coverts grey, rest of the wing-coverts black; primaries black, slightly tipped with white, the basal half white, forming a distinct alar patch; the secondaries black, broadly tipped with, and the whole of the inner web white; the outermost secondaries narrowly edged on the outer web with white; rump and upper tail-coverts white; the two centre feathers of the tail on each side black, slightly tipped with white, the next broadly tipped with white, the next still more broadly tipped, and having the basal portion and the outer web entirely white, the two exterior feathers entirely white, with a black shaft-line; under surface of the body white; bill and feet blackish horn-colour; iris dark brown. Total length 9 inches, culmen 0·7, wing 4·1, tail 4·8, tarsus 1·2.

Winter plumage. A little duller than in summer, and the back slightly tinged with olivaceous.

Young. The young birds of the year are decidedly duller in plumage than the older ones, and are chiefly characterized by a very distinct shade of ashy grey on the under surface, stronger on the flanks; the white forehead is not visible, and there is more black on this part than in the old birds. We have never seen nestlings of this species; but some young birds sent us from the neighbourhood of Etawah by our friend Mr. W. E. Brooks have a great admixture of ashy brown on the head and back, a shade of this colour also pervading the white margins on the wings.

Obs. During a recent examination of the European Shrikes, the results of which we published in the 'Proceedings' of the Zoological Society (P. Z. S. 1870, p. 590), we were led to believe that *Lanius elegans* of Swainson was nothing but the present species. The type still exists in the British Museum; and the locality assigned, viz. the "Fur Countries," is probably erroneous. Although there is little chance of a Grey Shrike having been hitherto unobserved in North America, we yet hesitate to upset the well-known name of *lahtora* for Swainson's title, until further research shall have proved the correctness of our identification.

The numerous names which have been applied to this species have principally been bestowed from a misunderstanding of the slight variations which obtain in its different stages. From the examination, however, of a large series, it appears to us that the young birds as they approach maturity grow gradually more white and mealy in plumage, and show much more white on the eyebrow and rump. The outer tail-feathers also become gradually entirely white; and thus arises our opinion that *Lanius hemileucurus* of Drs. Finsch and Hartlaub is nothing but the very old *L. lahtora*: our friends do not agree in this identification as regards their species, and Dr. Finsch has sent us a sketch of the tail of the type specimen. Nevertheless our opinion remains the same; for on re-examining our series of specimens it is very clear that the black on the tail-feathers which occupies the base even of the outer rectrix in the young, gradually disappears as the bird gets older, and there can be little doubt that in the very old bird the three outer tail-feathers become entirely white. Thus *Lanius fallax* of the above-named authors we consider to be only the young of *L. lahtora*.

The present species belongs to the same section of the Grey Shrikes as *Lanius algeriensis*, being distinguished by its thick-set build and stout, clumsy leg. It replaces our Great Grey Shrike on the southern shores of the Mediterranean, just as *L. algeriensis* is the Algerian representative of the Spanish *L. meridionalis*.

To commence with its most westerly habitat, which is Algeria, we find the following account of the bird given in Loche's great work on the ornithology of that country. According to him this Shrike has a more restricted range than *L. algeriensis*, not being met with on the coast, but merely in the M'Zab country; and the specimens in the Algerian collection were obtained near Gard Haïa, whence also the eggs were procured. It was not observed in the

southern part of the Province of Algiers. Our friend Dr. L. Taczanowski writes to us that it is common throughout the winter in the deserts of Algeria and on the southern slopes of the Atlas, in which latter locality it replaces *L. algeriensis*. Further notes on the present species will be found below from the pen of our friend Mr. J. H. Gurney, jun. The late Mr. W. T. Chambers noticed the species in Tripoli, where it was breeding.

Captain Shelley writes:—"This Shrike is not uncommon in Egypt and Nubia, where it remains throughout the year." Mr. E. C. Taylor also procured it in the winter in Upper Egypt, but states that he never heard of its occurrence in the Delta. In the great work by Drs. Finsch and Hartlaub, on the birds of Eastern Africa, a full account is given of the species in the Ethiopian Region. "Hemprich and Ehrenberg procured it in Nubia; the Shrike referred to by Rüppell as *L. minor*, from the Island of Dahalak, on the Red Sea, must be referred to this species, as Von Heuglin found it there in June breeding. Baron von der Decken procured it on the Island of Agig, at Tadjura, and on the Adail coast, in the Somali country; and Daubeny at Mokolla, on the Abyssinian coast. Heuglin found it common on the islands and cliffs in the lower part of the Red Sea and Gulf of Aden, most numerous on Dahalik, often on rocky islands where there was scarcely a sign of vegetation." Mr. W. T. Blanford observes:—"It was abundant on the shores of Annesley Bay in January and February. It is evidently migratory there, for it had disappeared in May. I again obtained specimens near Massowa in August."

Mr. Jesse, who obtained during the Abyssinian expedition the specimens of *L. fallax*, which, as we have above stated, are only the young *L. lahtora*, gives the following note concerning the species:—"I procured four specimens, all more or less moulting: three were from Rairo, the fourth was shot a few miles from Ain, on the plain towards Mai Wallet. I believe I shot two specimens of this Shrike at Koomaylee, but was too unwell to preserve them; this was in the middle of March."

In Palestine Canon Tristram says it is the commonest Shrike, and "resides all the year in every part of the country." De Filippi met with it in Persia; and we have ourselves seen several specimens from Central Asia. By Jerdon we are informed that "it is spread throughout the greater part of India, but is not found in the damp provinces, nor in Lower Bengal." Major Irby states that it was occasionally noticed by him in Oudh and Kumaon; and the late Captain Beavan writes:—"This species is particularly abundant about Umballah, where I procured several fine examples about the station in October 1866." In Maunbhoom it was found by the same observer to be rare. Through the kindness of our friend Mr. Swinhoe we have also been able to examine some specimens from Amoorland, thus showing the very extended range enjoyed by this species.

Respecting the Pallid Shrike in Algeria, Dr. Taczanowski says that in its habits it much resembles *Lanius excubitor*, but is far less wild, but like that species impales large insects on thorn-bushes. Loche writes as follows:—"It frequents the oasis, is insectivorous, but does not disdain small birds, when it can get them; its flight is undulating and not strong, its note flute-like and pleasant, and generally uttered from the top of a palm. This species is met with singly or in parties of four or five individuals; it is shy and wild. Its nest is placed on a tree or bush, and is constructed of roots, fine twigs, well built, and carefully lined. The female deposits four or five eggs, pale whitish, covered with reddish-brown spots, and measuring 27 by 21 millims.

The parent birds attend to their young with great care, and feed them with caterpillars, larvæ, and all sorts of insects, not leaving them until they again undertake the cares of nidification." The following notes have been published by Canon Tristram on the bird as observed by him in Northern Africa:—"While its numerous congeners who resort to the coast of North Africa are all migrants, the Pallid Shrike, which never transgresses the northern limits of the Desert, remains a permanent resident, breeding very early, not only in the trees of the oases but in the low jujubes and prickly shrubs of the dayats. Its nest and eggs in no way differ from those of the Great Grey Shrike, which it much resembles in size and general appearance. It is a remarkably fearless bird, and will remain calmly perched on the outmost edge of a palm-leaf while a party is sitting and talking beneath the shade of the tree. It is extremely abundant in all the oases; and its plaintive cry may be heard in every dayat. I once saw one feasting on an impaled Dartford Warbler; but its usual food appears to be the large *Blaps*, which swarm in myriads through the dayats and weds. Under the old nests at least a bushel of beetle-wings might be collected; and the insects hang impaled on every jujube thorn around. This is not a solitary bird, though hardly gregarious; but three or four may generally be found not far apart. It is a special object of dislike to the Willow-Wren, whose clamours frequently disturb its noontide siesta. No other Shrike came under my observation in the winter, nor did any appear to halt in the Desert on their vernal migration, though on our return to the coast we found that at least five species had arrived from the south." Mr. J. H. Gurney, jun., in his essay on the ornithology of Algeria, has also given some account of its habits:—"While I was at Gardaia a great flight of locusts passed over the city, and the White Shrikes fed upon them. This tamest of birds is very common in the Mzab country. No clump of trees, or dayat, is without its pair. The young are fully grown by the end of April; they infest every garden, preying upon the swarms of coleoptera which a high degree of moisture fosters; and, from their habit of not immediately eating what they catch, they are generally seen with something in their mouths. A favourite perch is the bottom of the crest of a palm where the fronds are broken short, whence they can easily dart off to snatch a passing beetle, or rise into the air after a more high-flying locust. The Pallid Shrike's is a laboured flight, slow, but with very rapid beating of the wings. Its note is loud and sharp. It can mimic other birds; I have heard a young one utter notes which were the exact counterpart of those of the Desert Bullfinch (*Carpodacus githagineus*)."

We transcribe the following details respecting the present species from Canon Tristram's well-known paper on the ornithology of Palestine. The specimens he brought home were none of them very old, which circumstance caused him to mistake the species for *L. excubitor*; but an examination which he kindly allowed us to make of his series of examples, has enabled us to see that they really belong to *L. lahtora*. He observes:—"His favourite perch in winter is the outermost bough of some bare prickly shrub; and when approached he simply flits to the outside of the next bush. He builds his great nest, well defended by thorns from the attacks of Hawks, in the middle of a jujube-tree, long before the eggs are out. I have taken eggs incubated in the middle of March. While the female is sitting, her mate chooses the most conspicuous perch close by, and by his manner invites a scrutiny. But he is bold and daring; and I have seen him beat off the Green Lizard, that pest of small nestlings. Generally, however, the prickly bush is sufficient to turn even a Lizard. So tame will this Shrike become that after a few days a pair of

them regularly frequented our camp for the sake of the morsels thrown outside the tent during the occupation of skinning, and in securing their dainties they behaved with all the coolness of London Sparrows." Von Heuglin says that in North-eastern Africa he "often found the nest in the eyrie of the Osprey, or at least covered by the latter, more seldom placed on *Samra* or balsam-bushes. It is generally placed from four to eight feet above the ground, and resembles that of *Lanius minor*, but is less neatly built, besides being flatter and broader." In India Jerdon states that "it affects chiefly low, thin, and thorny jungle, or plains where a few low trees or bushes are sparingly sprinkled; it is not often found in cultivated ground or near villages. It has the usual habits of the tribe, sitting on the top of some low tree on the watch for a cricket or locust, or for some young or sickly bird to come near. It flies low, near the ground, from one tree to another; and it has a harsh grating cry, but can also sing sweetly, and, it is said, imitates the song of other birds to bring them near. Mr. Philipps states that he has seen it capture small birds, and that in the north-west it is occcasionally trained to do so. He also relates that it is sometimes picketed to the ground, closely attached to a Starling, and the neighbouring bushes, twigs, &c. being well smeared with birdlime. All sorts of birds come to witness the supposed fight and to separate the combatants; and many are captured by the limed branches."

With regard to its nidification in the same country he writes as follows:—"I have seen the nest and eggs on several occasions from February to May. The nest is rather large, deep, cup-shaped, made of twigs, roots, &c., and lined with hair or cotton; and the eggs, three to five in number, are dull greenish-white, with a few spots and blotches of greenish brown and light reddish-brown. Burgess asserts that it migrates from the Deccan during the monsoon; but I saw it all the year round at Jalnah, as well as in other parts of the country."

Eggs of this Shrike in Dresser's collection, obtained by the Rev. Canon Tristram in Palestine, are dull light stone-grey, marked with pale purplish-brown underlying shell-spots, and dull nut-brown overlying surface-blotches, and much resemble eggs of the Great Grey Shrike (*L. excubitor*). In size they measure from 1 inch by $\frac{28}{40}$ to $1\frac{2}{40}$ by $\frac{31}{40}$ inch.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a. Algeria (*Fairmaire*). *b*, ♀. Taggurt, December 27th, 1856 (*H. B. Tristram*). *c*, ♀. Thebes, Upper Egypt, January 24th, 1863 (*S. Stafford Allen*). *d*, ♂. Gennesaret, March 9th, 1864 (*H. B. Tristram*). *e, f, g*. Etawah (*W. E. Brooks*). *h, i, j, k, l*. Punjaub (*C. H. T. Marshall*).

E Mus. R. B. Sharpe.

a, ♀. Rairo, August 14th, 1868 (*W. Jesse*). *b*. Senaar (*Kotschy*).

E Mus. H. B. Tristram.

a, ♀. Berryan, December 1st, 1856 (*H. B. T.*). *b*, ♂. Gardaia, December 5th, 1856 (*H. B. T.*). *c*, ♀. Plain of Acre, December 9th, 1863 (*H. B. T.*). *d, e*, ♂, ♀. Jericho, December 30th, 1863, and January 2nd, 1864 (*H. B. T.*). *f*, ♂. Engedi, January 23rd, 1864 (*H. B. T.*). *g*, ♀. Tiberias, March 29th, 1864 (*H. B. T.*). *h*. Deyra Doon, between the lower Himalayas and the Sewalik ranges.



SOUTHERN GREY SHRIKE.
LANIUS MERIDIONALIS
79

LANIUS MERIDIONALIS.

(SOUTHERN GREY SHRIKE.)

Lanius meridionalis, Temm. Man. d'Orn. i. p. 143 (1820).
Collyrio meridionalis, Gray, Hand-l. of B. i. p. 390 (1869).

Alcaudon real, Spanish; *Picanso*, Portuguese.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 3; Gould, B. of Eur. ii. pl. 67; Roux, Ornith. Prov. pl. 153; Bout. Orn. Dauph. p. 18. fig. 2; Fritsch, Vög. Eur. tab. 21. fig. 13.

♂ suprà plumbescenti-cinereus, uropygio et supracaudalibus paullò pallidioribus, pileo saturatiore: scapularibus exterioribus albis, plagam distinctam albam formantibus: tectricibus alarum minimis dorso concoloribus, medianis et majoribus nigris, his angustissimè albo terminatis: remigibus nigris, primariis ad basin externè albis, speculum alare distinctum formantibus, primariis minoribus angustè et secundariis conspicuè albo terminatis: caudâ nigrâ, pennis omnibus, duabus mediis omninò nigris exceptis, albo terminatis, exterioribus gradatim versùs basin albis, extimis ferè omnino albis, præter rhachin imam et partem basalem nigras: fronte angustè et superciliis albis: loris et fasciâ infraoculari et regione paroticâ nigerrimis: mento genisque albidis: corpore subtùs reliquo rosaceo tincto: hypochondriis cinereis: subcaudalibus et subalaribus albidis, his paullò nigricante variis: rostro et pedibus nigris: iride brunneâ.

♀ mari similis.

Juv. similis adultis, sed sordidior, suprà cinerascens, pileo paullò plumbescente: subtùs sordidè rosascens, gutture et abdomine cum subcaudalibus albicantibus.

Adult Male. Upper surface of the body dark plumbeous, the head darkest, and the rump and upper tail-coverts slightly paler; scapulars coloured like the back, some of the outer ones white, forming a conspicuous patch down each side of the back; least wing-coverts also plumbeous like the back, the median and greater coverts jet-black, the latter faintly and irregularly tipped with white; quills deep black, the primaries white at the base of the outer web, forming a distinct alar speculum, the inner primaries narrowly and the secondaries broadly tipped with white; tail black, the two central feathers entirely so, the two next white at the tip, this colour gradually extending itself on the remaining feathers, till the external feather is almost entirely white, the shaft for the greater part of its length, and the extreme base of the feather alone being black; a narrow frontal band and a tolerably distinct eyebrow white; a line of feathers from the base of the bill, including all the feathers in front of the eye, under which it passes, and embracing the ear-coverts, jet-black; throat and cheeks whitish, with the faintest tinge of pink; rest of the under surface of the body suffused with a beautiful pink blush; sides of the body ashy grey; under wing- and tail-coverts white, with a few black markings on the former; bill and feet black; iris dark brown. Total length 10 inches, culmen 0·75, wing 4·1, tail 4·5, tarsus 1·15.

Female. Similar to the male.

Young. Above dingy ashy-brown, the dark plumbeous feathers appearing in some places on the crown; the scapular patch dirty white; wings and tail as in the adult; lores and eyebrow white; throat and abdomen dingy white; rest of the under surface of the body dull pink; bill horn-black, the lower mandible horn-brown. Total length 9·2 inches, culmen 0·7, wing 4·1, tail 4·5, tarsus 0·15.

Obs. The alar speculum seems to vary considerably in size, apparently getting larger and more extended as the bird increases in age. Some individuals have a narrow black line across the base of the forehead, and have less white on this part and the eyebrow.

The Southern Grey Shrike represents the Great Grey Shrike in the southern countries of Europe proper, being plentiful in Spain and Portugal, as well as in southern France. It has also been recorded from many of the countries bordering the Mediterranean; but we know that it has often been confounded with *Lanius algeriensis* and *L. lahtora*; so that many of these habitats are erroneous, and others are open to question. Much careful research will be necessary to determine accurately the exact range of the species.

MM. Degland and Gerbe state that it is found in the south of France, and that according to M. Crespon it is most abundant in the department of Gard of anywhere in Europe. In the south of France, and especially near Nîmes, where it is sedentary, it frequents the woods and especially arid stony places. The following extract is from the well-known work of MM. Jaubert and Barthélemy-Lapommeraye:—"This is a very distinct species from the Great Grey Shrike, and is less rare in Provence than Roux considered it to be. Not only does it breed regularly there, but even remains during severe cold weather. It is principally found on the plains in the Crau or the Camargue, as also in the plateaux between the Durance and Verdun. Its nest is placed on high trees; and it evinces a preference for fir trees standing apart: in one of these trees we found a nest of this species by the side of that of a Kestrel. It is generally constructed in a similar manner to that of *L. excubitor*, of a quantity of grass and small twigs, is of considerable size, and contains from four to five eggs."

As regards the present bird in Spain, Lord Lilford writes to us:—"The Southern Grey Shrike is found in many parts of Spain, but, as far as my own observation goes, is not abundant in any part of that country. I found two pairs in a wild tract of country covered with brush-wood, near Aranjuez, in New Castille, in May 1865. The nest is rather difficult to find, being generally situated in the middle of some dense thorny evergreen bush. This Shrike has much the same habits as its near relation, *L. excubitor*, but does not, I think, affect trees so much as that species, confining itself, in Spain at all events, to 'matornál,' *i. e.* scrub of moderate height. It is a restless and noisy bird, and its note is a harsh guttural scream. I found it under precisely the same circumstances as above in May 1869, in Andalucia, and I have also observed it near Valentia. I saw a Grey Shrike in Aragon in 1867, which I feel convinced was *L. excubitor*; but I did not obtain the bird, and never met with the species on any other occasion in Spain." Dresser has himself observed *L. meridionalis* in various parts of Spain, where it is found breeding; in general habits it much resembles *L. excubitor*. Mr. Howard Saunders gives the following note in his List of the Birds of Southern Spain, which embodies his experiences of this Shrike in the above-named country:—"It is," he writes, "generally distributed, ranging as far north as Aragon; but, owing to its shy nature, it appears rarer than it really is. I have

found nests in much the same places as the Missel-Thrush would have chosen, about halfway out on a bough of some tree whose name I forget, though its thorny character is fresh in my memory. One I found, and from which I had seen the bird fly off, was so immediately over my track, that, pulling up my horse, I proceeded to inspect its contents, standing up on the saddle; unfortunately the horse moved on before I was ready, and I was left like Absalom." In a note lately received by the authors, he observes that it begins to nest about the latter part of April, and that the complement of the eggs is five. Major Irby writes to us:—"As far as my observation goes, this bird is a spring migrant. It is common, and breeds near Seville, but not in the neighbourhood of Gibraltar, where I have only seen it in autumn. The last I saw was on the 8th of November, the first on the 8th of April." Mr. A. C. Smith says that *L. meridionalis* is the common Grey Shrike of Portugal; and Dr. E. Rey, who was for some time in that country, tells us that he had opportunities of observing the species, and he found it to differ in appearance and habits from *L. excubitor*, with which he was well acquainted. Mr. C. A. Wright includes it among the birds of Malta, observing:—"Of *Lanius meridionalis* several specimens have been taken. I have two in my possession, one of them, a female in the plumage of the adult male, killed on the 12th of February 1861."

We have ourselves never seen a really authenticated specimen of the present species from any locality south or east of the Spanish peninsula, and we beg for further information on the subject. The bird recorded under this name as common in Tangiers by Mr. C. F. Tyrwhitt Drake is *L. algeriensis*; and all the references to its occurrence in Tunis and Algeria also belong to the latter species. A Grey Shrike occurs in the Canaries, but the species is not yet determined. Mr. F. Du Cane Godman writes to us on the subject:—"I saw only one pair of Grey Shrikes in Teneriffe, and could not get a shot at them, so am not certain as to the species. Bolle calls it *L. excubitor*; and it may be, for all I know to the contrary. It is most frequent in the eastern islands, Lanzarote and Fuerteventura, which I did not visit." The Shrike of the Canaries will, we believe, turn out eventually to be *L. algeriensis*.

To the eastward the Southern Grey Shrike has been recorded from Italy, Sicily, and Sardinia; but in his latest work, Salvadori says that he is very doubtful as to the occurrence of this species anywhere in Italy, never having observed it either alive or in any of the many collections of Italian birds which he has examined. He adds that it is also wanting both in Sicily and Sardinia, and confesses his error in having included it in his list of the birds of the latter island, the supposed specimen in the museum of Cagliari being really *L. minor*. Professor Doderlein confirms the above statement, both as to the Province of Modena and the Island of Sicily.

In 'The Ibis' for 1859 Lord Lilford wrote:—"I shot a specimen of this bird in the Island of Corfu on the 29th of April 1857. It is far from common in these parts. The Corfu bird-stuffer assured me that my bird was the only one he had ever seen." We have been somewhat sceptical as to the correct identification of this specimen; but Lord Lilford assures us that the bird was undoubtedly of the present species; so that its eastward range as a migrant to the Ionian Islands is established. Lindermayer states that it is a rare summer visitant to Greece, arriving late in April, remaining to breed, and leaving at the end of August. In his account of the Natural History of the Cyclades, Dr. Erhard states that *Lanius meridionalis* is only a rare

visitant, though near Athens it is the commonest Shrike. It is even included among the birds of Southern Russia by Von Nordmann, who states that it is rarer there than *L. excubitor*. We fancy that some species other than true *L. meridionalis* is the subject of these observations.

From an examination of his specimens, kindly lent us by Canon Tristram, we have found that the bird spoken of as *L. meridionalis* in Palestine is really *L. lahtora*, and the species must not be included among the birds of the Holy Land. Baron J. W. von Müller gives the range of *L. meridionalis* in North-eastern Africa as far south as Senaar; but this is doubtless an error, as already pointed out by Sharpe in his critical remarks on Dr. von Heuglin's 'Ornithologie Nordost-Afrika's' (Ibis, 1870, p. 434).

Our friend Dr. E. Rey, of Halle, informs us that fifteen eggs in his collection, procured in Spain, average in size 26·25 by 19·56 millimetres, the largest measuring 28·0 by 19·0, and the smallest 26·5 by 18·75 millimetres respectively. Eggs in Dresser's cabinet, collected by Manuel de la Torre, near Madrid, measure from $1\frac{1}{40}$ by $\frac{31}{40}$ to $1\frac{4}{40}$ by $\frac{31}{40}$ of an inch, and are greyish white, thickly covered with rich dark nut-brown spots and blotches. Compared with a large series of eggs of *Lanius excubitor* the markings are much richer in colour and more thickly distributed over the surface of the egg, and never appear to collect in a ring round the larger end, as do the spots on many eggs of *L. excubitor*.

The figures in the Plate represent adult and young birds in our collection, the former given us by Lord Lilford, the latter by Mr. Howard Saunders. The descriptions are taken from the same birds.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, ♂. Spain, 1869 (*Lilford*). *b, c, d, e*. Seville, December 1869 (*H. Saunders*). *f, juv*. Seville, Spain (*H. Saunders*).

E Mus. Lord Lilford.

a, b, c. Coto del Rey, Andalucia, May 1869 (*L.*).

E Mus. Howard Saunders.

a, b, ♂, ♀. Seville, December 1st and 8th, 1869 (*Ruis*). *c*, ♂. Malaga, December 27th, 1868 (*H. S.*).

E Mus. H. B. Tristram.

a, ♀. Seville, September 30th, 1869 (*H. Saunders*). *b*. Old Granada, May 1870 (*H. Saunders*).

E Mus. J. H. Gurney, jun.

a, ♂. Seville, March 4th, 1870 (*H. Saunders*).

E Mus. A. Basil Brooke.

a, ♀. Seville, February 8th, 1870 (*H. Saunders*).



LANIUS ALGERIENSIS.
XVII

LANIUS ALGERIENSIS.

(ALGERINE GREY SHRIKE.)

Lanius algeriensis, Less. Rev. Zool. 1839, p. 134 (descr. orig.).
Lanius meridionalis, Malh. Cat. Rais. Ois. de l'Algérie, p. 9 (1846, *nec* Temm.).

L. saturate cinereus: scapularibus dorso concoloribus, albo terminatis, plagam distinctam albam formantibus: tectricibus alarum minoribus cinereis, majoribus autem nigerrimis: rectricibus nigris, primariis ad basin externe albis speculum album formantibus, secundariis interne versus basin albis et conspicue albo terminatis: cauda nigra, pennis duabus mediis omnino nigris, duabus proximis vix albo terminatis, reliquis graduatim albo plus terminatis usque ad duas extimas fere omnino albas: subtus cinereus, gutture cum genis et abdomine imo albidis: tectricibus subalaribus et subcaudalibus albis: rostro nigricante: pedibus griseo-brunneis: iride saturate brunnea.

Above dark blue-grey, the edge of the scapulars white; least wing-coverts grey, the rest jet-black; primaries black, white at the base, forming a very distinct white speculum, the secondaries paler on the inner web, conspicuously tipped with white; tail black, the middle feathers just tipped with white, the others black at the base, but the white predominating towards the external feathers: a narrow line over the forehead, loral space, and ear-coverts black; entire under surface grey, inclining to pure white on the throat, cheeks, and abdomen; on centre of the breast and belly a slight tinge of ochre; under wing- and tail-coverts whitish; bill and feet black. Total length 9·6 inches, culmen 0·75, wing 4·3, tail 4·8, tarsus 1·1.

Young. General colour brown, suffused with grey where the feathers are changing colour; under surface of the body greyish, with brownish vermiculations on the upper part of the breast and flanks; the throat and abdomen whitish. Compared with *Lanius excubitor* of the same age, the plumage of the young Algerine Shrike is very much darker, while the stout bill and thickset leg are sufficiently conspicuous.

When compared with the Spanish Grey Shrike (*Lanius meridionalis*), the present species is at once to be distinguished by the colouring of the under parts, which are greyish without any tinge of pink, as in the Spanish bird. Viewing the two species side by side it will also be observed that the beak and leg of *Lanius algeriensis* are very stout, while the alar speculum is at least three times as large as in *L. meridionalis*.

The Algerine Shrike is, as its name indicates, a native of Algeria, to which country it is absolutely confined. Mr. Osbert Salvin remarks that, "whereas *Lanius lahtora* is confined to the northern slope of the Atlas, its place in Tunis and on the southern watershed is occupied by *Lanius algeriensis*. I frequently met with this bird in Tunis, at Souza, and other parts of the Regency, but lost sight of it on ascending the Atlas range." Mr. J. H. Gurney, jun., says that on his recent visit to Algeria he found this species "shy and hard to kill. It goes as far as Laghouat; but about a day's journey south of that town the next species takes its place." Dr. Taczanowsky's remarks differ from those of Mr. Gurney as to the shyness of the species, as his experience proved them to be less shy than *Lanius excubitor*, like which bird they stick insects on

thorns. He records it as very common on the large plain near Lake Fezzara, and says it is found in suitable places on the northern slope of the Atlas.

Dr. Tristram has forwarded us the following note:—

"This, in winter, is the only Shrike found north of the Atlas, though in summer it is far outnumbered by the return of the neighbouring *Lanius lahtora*. It seems strictly sedentary. In its manners, note, flight, and domestic architecture, as well as in its eggs, in no way does it differ from the latter; but on the whole I think it is rather a later breeder, and is not quite so fond of courting the public gaze."

Captain Loche in his great work gives the following account of the present bird:—

"In its habits this Shrike does not differ from its congeners. Its food consists of insects, small birds, and small mammals, which it captures with remarkable skill. It is sprightly, courageous, and quarrelsome, and knows how to make itself feared by birds much larger than itself; nor is it rare to see it during the nesting-season attack Buzzards, Kites, and Crows which approach its nest, and which it drives off. It builds in trees, or sometimes in high bushes, making its nest of small twigs, dry grass, and moss, well woven together, and lining it with feathers and down. The eggs, four in number, are whitish, covered with numerous small spots of a clear brown, which collect and form a zone towards the end. They measure about 26 millims. in length by 20 millims. in breadth.

We have taken the description and figure of the adult bird from a well-preserved skin in our collection, while the young bird is described from a skin collected by Dr. Tristram, at Algiers, in September 1856. We notice that in some of the adult birds the grey on the under surface of the body is more plainly diffused than in others. Loche supposes these birds to be the females.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, b, c, d, e, f. Algeria.

E Mus. H. B. Tristram.

a–e. Algeria, September 1856 (*H. B. T.*). *f.* Blida (*J. H. Gurney*).



LESSER GREY SHRIKE.

LANIUS MINOR.

LANIUS MINOR.

(LESSER GREY SHRIKE.)

Pie-grièche d'Italie, Buff. Pl. Enl. 32 (1770).
Lanius minor, Gm. Syst. Nat. i. p. 308 (1788, ex Buff.).
Lanius italicus, Lath. Ind. Orn. i. p. 71 (1790).
Lanius vigil, Pall. Zoogr. Rosso-Asiat. i. p. 403 (1811).
Lanius longipennis, Blyth, J. A. S. B. xv. p. 300 (1846).
Enneoctonus minor, Blyth, Cat. B. Mus. A. S. B. p. 153 (1849).
Enneoctonus italicus, Bonap. Rev. et Mag. de Zool. 1853, p. 438.
Lanius roseus, Bailly, Orn. de la Sav. ii. p. 26 (1853).

Pie-Grièche d'Italie, French; *Averla cenerina*, Italian; *grauer Würger*, German; *Sorokoputh*, Russian.

Figuræ notabiles.

Buff. Pl. Enl. 32. fig. 1; Werner, Atlas, *Insectivores*, pl. 4; Naum. Vög. Deutschl. ii. taf. 50; Gould, B. of Eur. ii. pl. 68; Roux, Orn. Prov. pl. 154; Gould, B. Gt. Br. part xiii.; Fritsch, Vög. Eur. tab. 21. fig. 28; Bree, B. of Eur. i. p. 165.

♂ *ad.* suprà pulchrè cinereus, uropygio et scapularibus exterioribus vix pallidioribus: pileo antico, regione oculari et paroticâ nigerrimis: tectricibus alarum nigris, margine alari sordidè albo: primariis nigricantibus, versùs apicem brunnescentioribus, primariis ad basin latè albis, speculum magnum alare exhibentibus, secundariis angustè albo terminatis: caudâ nigrâ, rectricibus centralibus omninò nigris, proximis gradatim albo terminatis, extimis omninò albis: genis et corpore subtùs toto albis, pectore et hypochondriis delicatè roseo lavatis: subalaribus albis, cineraceo lavatis: rostro et pedibus nigris: iride saturatè brunneâ.

♀ mari simillima, sed pileo antico minùs nigricante: lineâ frontali albicante, fronte cinereâ, nigro mixtâ.

Juv. similis adultis, sed ubique pallidior, fronte haud nigricante: dorsi plumis fasciâ fuscâ subterminali antè apicem album transnotatis: tectricibus alarum remigibusque conspicuè albido limbatis et terminatis: subtùs fulvescenti-albus: rostro nigricanti-corneo.

Adult Male in summer plumage. Above delicate blue-grey, slightly paler on the scapulars and rump; forehead, feathers in front of, around, and behind the eye, as well as the ear-coverts deep black; cheeks white; wing-coverts black; quills black, becoming brownish towards the tips, the secondaries tipped with white; the bases of the primaries white, forming a broad alar speculum; tail black, the middle feathers entirely so, the next slightly tipped with white, which gradually increases in extent towards the outermost feathers, leaving the exterior rectrix on each side entirely white; under surface of the body white, the breast and flanks suffused with a delicate rosy blush; under wing-coverts white, the lower ones decidedly washed with ashy, the margin of the wing being white; bill and feet black; iris dark brown. Total length 8·2 inches, culmen 0·55, wing 4·6, tail 3·9, tarsus 1·0.

Adult Female. Can always be distinguished from the old male by the less amount of black on the fore part of the head; the forehead is slightly varied by a few blackish feathers, which are preceded by a narrow whitish frontal band.

Young. The young birds have no trace of the black forehead, and otherwise differ from the adults in having most of the feathers of the upper surface crossed by a narrow dusky subterminal bar, and tipped with white; the whitish edgings to the wing-coverts and quills are very broad and conspicuous; the under surface of the body is a dull yellowish white.

Obs. Even before they leave Europe the traces of the barred plumage of the young begin to disappear; and by the time that the birds have reached South-western Africa, which seems to be their winter home, the whole of the upper surface is of a uniform brownish ash-colour. In Sharpe's collection are several examples from Damaraland obtained by the late Mr. C. J. Andersson; and the state of moult in which some of them are shows that the fully adult plumage is not assumed till the following spring. One specimen is putting on his adult livery, and even showing the first appearances of the rose-coloured breast; this bird was obtained at Objimbinque on the 10th of February, 1864.

The present species is a summer visitor to Europe, migrating south in the autumn as far as South-eastern Africa. Its summer habitat appears to extend over Central and South-eastern Europe; but it sometimes straggles into the more northern countries of the continent.

Twice it has been known to occur in England—the first specimen having been obtained, as long ago as 1851, in the Scilly Islands, while a second example was procured near Yarmouth in the spring of 1869. Full particulars of these two examples will be found in Professor Newton's edition of 'Yarrell,' and in Mr. Harting's 'Hand-book.'

The Lesser Grey Shrike is likewise stated to have been once killed in Denmark; but our friend Mr. Benzon informs us that he cannot find any authentic evidence of its capture, although mentioned by Kjærbölling. In Sweden it has been said to breed; and Nilsson states that a pair were observed, and the hen bird procured, at Lackalänga, near Lund, on the 29th of May, 1837, and that Pastor Wallengren observed one near Ljungby, but could not then procure it; he succeeded, however, in shooting a male bird there on the 20th of May, 1856; and Nilsson himself saw one near Hafgård, in Southern Skåne. Westerlund also says that it breeds in East Skåne, where a nest was found in 1866, near West Wram, and sent to the Lund Museum by Pastor Sjörén. Meves, on the other hand, after examining this nest, is certain that it is that of *L. collurio*, and he considers that *Lanius minor* has never really bred in Sweden. Von Wright records only one instance of its occurrence in Finland; and even in the Baltic Provinces it is very uncommon, Meyer only recording a specimen shot on the Aa. In Germany, according to Naumann, it is migratory, being rare in some localities and common in others. It arrives early in May, breeds in Germany, and leaves again in August, migrating during the night. According to Borggreve it is not uncommon in the eastern and central parts of North Germany, occurring in all parts to the east of the Elbe, and occasionally in Thuringia, Anhalt, and Eastern Hanover. Brahts gives an exceptional instance of its breeding at Neuwied. Godron records it as rare in Lorraine, where it has been killed near Nancy and Metz; and Krœner gives it as a resident in Alsace from April to September, "nesting in the forests and on large trees bordering the roads."

Degland and Gerbe state that *Lanius minor* is very common in spring and summer in

Provence, Languedoc, and the southern provinces of France, in many of which it breeds. In Provence it is generally found on the plains or near water, according to MM. Jaubert and Barthélemy-Lapommeraye. Bailly writes that it is not rare in Savoy, arriving in pairs about the 20th to the 25th of April, and leaving from the middle of August to the early part of September. A few breed near St.-Jean-de-Maurienne, Bonneville, Roche, and Faucigny; but they are more numerous amongst the poplars which fringe the plains and marshes of Challes, Boise, Bissy, La Motte-Servolex, Bourges, Ste.-Hélène-du-Lac, Mollettes, and in the high trees in the marshy localities near Chambéry. Mr. Howard Saunders says that it "occurs in the east of Spain, but Guirao considers it very rare even there." He further says that he has never noticed it in Andalucia, where, however, Machado records it as a common summer migrant; and Lord Lilford has only once seen it in that country. In Algeria it seems never yet to have been noticed; and our friend Mr. Gurney did not see it anywhere during his visit to that country.

In his Fourth Appendix to a List of Birds observed in Malta and Gozo (Ibis, 1870, p. 491) Mr. C. A. Wright says:—"In September 1866 I obtained my first and only specimen of this bird. Schembri mentions it as a very rare visitor, having met with it (also in September) in 1839 and 1840. My bird had the flanks well marked with pink colour, and was therefore most likely a male." In Sardinia, according to Salvadori, it arrives in the spring, and is one of the commonest Shrikes. The same author states that this species is rather abundant throughout Italy, arriving in April and leaving in September, and frequenting the lofty trees in the vicinity of the cultivated fields. Regarding its occurrence in Sicily, Professor Doderlein remarks that this species is very numerous in summer, especially in the neighbourhood of Palermo, where many pairs are to be found breeding; but according to Benoit it is less abundant about Messina, although generally distributed throughout the island. In Styria, according to Seidensacher, it is a common bird, nesting in the country. Lord Lilford writes as follows:—"A rare summer visitor to the island of Corfu, where I obtained three specimens in May 1858. Abundant in Montenegro in August." It arrives in Greece, according to Lindermayer, in the middle of April "in large numbers, and commences to breed early in May. About the middle of August both old and young leave the mainland for the south. Erhardt says that it is resident on the islands; and it is therefore probable that a few winter in Greece."

Mr. E. Cavendish Taylor noticed it near Smyrna, and again at Constantinople; and Messrs. Elwes and Buckley, writing on the birds of Turkey, state that it arrived in Bulgaria the last week in April, being a summer visitor to Turkey, and not uncommon in some parts. Pallas found it common in Southern Russia, where, according to Von Nordmann, it arrives in April, and leaves early in October. Ménétries writes that during his journey in the Caucasus he killed the Lesser Grey Shrike at Saliane, on the banks of the Kour, where it was found on the top of the trees. In Russia, Mr. Sabanäeff kindly informs us, it chiefly inhabits the southern part of the country, but occasionally, though rarely, is found breeding near Moscow. In the Governments of Kazan and Oufa it is commoner than *Lanius excubitor*, and is tolerably numerous in Simbirsk. According to the observations made by Professor Kessler in the Government of Kieff, it frequents bushes, gardens, and groves, and is never found in the large forests. In the late summer numbers are found on the islands of the Dnieper in company with Starlings.

It was noticed in Persia by De Filippi, and has also been procured near Erzeroom by

Mr. Keith Abbott. Canon Tristram, during his first visit to Palestine, noticed the present bird in the neighbourhood of Jaffa. Captain Shelley, in the 'Birds of Egypt,' writes as follows:—"This Shrike evidently ranges throughout Egypt and Nubia, and appears to remain in the country throughout the year; for Von Heuglin (Orn. N. O. Afr. p. 477) considers it a resident in North-eastern Africa; yet I am unacquainted with any authenticated instance of its capture in Egypt." The accompanying notes have been published by Von Heuglin:—"I cannot say for certain if it is a resident in North-eastern Africa. I have often obtained it on the coasts of the Red Sea in May and August, and in September both old and young birds at Keren in the Bogos country, and from the Bahr el Abiad. According to Brehm, it is found in September in the forests of the Blue and White Nile; and according to Rüppell it is common in the whole of North-eastern Africa." Lastly, as regards the winter home of the Lesser Grey Shrike, we are now able to quote, thanks to the care of Mr. J. H. Gurney, the notes left by the late Mr. Andersson:—"This species is very common in Damara Land during the rainy season; but on the return of the dry weather it mostly disappears, though I believe a few individuals remain throughout the year. These Shrikes usually perch on some conspicuous tree or other elevated object, whence they can obtain a good view of what passes around them; they feed chiefly on insects, which they catch both on the wing and on the ground. A great number of these birds are often found in a very limited space, and not unfrequently on the same tree."

The habits of the present species have been so well described by Naumann that we cannot do better than quote his own words:—"*Lanius minor* is common in some, rare in other parts of Germany, where it is a migratory bird. It arrives early in May, breeds with us, and leaves us at the end of August. It migrates during the night and seems to prefer the neighbourhood of villages, gardens near the fields, and more particularly meadows over which bushes and trees are scattered. It affects flat country in preference to hills, but is not found in marshy places. It is one of the latest summer visitants to arrive with us, and selects its breeding-place almost immediately after its advent; any after-comer it ousts from the neighbourhood; and these last generally migrate further on the following night. It is usually seen either on the wing or sitting quite still, and but seldom hopping from branch to branch, and still more seldom on the ground. It generally takes its position on the highest branch, and is not a shy bird. It flight is light and easy; and sometimes, for a short distance, it glides with extended and immovable wings like a bird of prey. Its nature is quarrelsome; and it often squabbles with other small birds. Its food consists of butterflies, all sorts of beetles, and their larvæ and pupæ, of which it not only devours a great number, but wantonly kills and leaves a great many more. It either watches on the top of a bush or some elevated position, or hovers in the air, dropping suddenly on the insect when it perceives one, and carries it off to its young. It generally tears off the hard wing-cases before swallowing a beetle, and squeezes it several times in its thick bill. It is a voracious feeder, seldom impales its prey on thorns, but holds it in its foot while it devours it piecemeal." Messrs. Jaubert and Barthélemy-Lapommeraye remark that although this species is chiefly insectivorous, it equally appreciates fruit, such as cherries, figs, &c.

All the Shrikes are more or less mimics; but the present species possesses this faculty in a most remarkable degree. Its own call-note is harsh; but by mixing portions of the utterances of other small birds, it is enabled to produce a kind of song. Thus Naumann observes:—"His

usual note is *kjäck*, *kjäck*, or *schäck*; his call-note *kwiä*, *kwiell*, and *perletsch*. I have often heard him mix up the call-notes of the Sparrow, Goldfinch, Swallow, and other small birds, mixing them with his own call-note and thus making a not disagreeable song; still I have never heard him imitate a long song of any small bird."

The following interesting account of the nest is extracted from Lindermayer's 'Birds of Greece':—"The nest is completed about the 12th of May, and consists, without exception, of fresh plants of *Gnaphalium dioicum*, on which even leaves and flowers are to be seen. It is lined with plant-cotton and wool. It is placed only on olive-trees, at a medium height, almost always on the outermost twigs, and it lays from five to six eggs. This Shrike is sometimes so common in Attica that I have found twenty nests on a single forenoon." Dresser has had ample opportunities of observing the nidification of the present species in Styria. He usually found the nest placed at some height, the oak tree being usually selected for this purpose. The structure is of considerable size, is composed of twigs, roots, grass, &c. and is lined with wool, hair, and sometimes a few feathers. The eggs vary in number, from five to seven, clutches of both these numbers being in Mr. Dresser's collection. Naumann informs us:—"The nest is placed in a high pollard tree, in the top of a small tree, or on large branches of a wild pear or crab. It is never less than ten feet from the ground, is of large size, and has the foundation formed of a bunch of dry roots, twigs, grass, &c., and is well lined with wool, hair, and feathers. Both sexes incubate for the space of about fifteen days, and feed the young with insects until quite large, and drive Crows, Magpies, and other birds fiercely from the neighbourhood of their nest." Pastor W. Pässler states as follows:—"It always uses green grasses for its nest, employing comparatively few dry ones. It also makes use of woollen threads and field-flowers." Baedeker remarks that the nest is heavily built, rather higher than a half globe, constructed almost entirely of clover-stems intermixed with feathers, and lined with grass and wild flowers, and that the female deposits from five to seven eggs. Dr. E. Rey, in his 'Ornis von Halle,' writes that he observed the first arrivals between the 24th of April and the 7th of May, and the earliest autumn migrants left about the 18th of August, the last being observed on the 10th of September. He gives the following dates of the taking of their eggs, viz. four on the 17th of May, three on the 22nd of May, five and five on the 24th and 27th of May, five, six, and five on the 2nd and 6th of June, and six on the 10th of June. In a subsequent letter he informs us that forty-five eggs of this species, collected in Germany, now in his collection, average in size 24·4 by 18·0, the largest measuring 26·0 by 19·5, and 25·5 by 19·75, and the smallest 22·0 by 17·75, and 23·0 by 16·75 millimetres respectively. With regard to its range during the breeding-season, he states that it is common in Central and South-eastern Europe, but is wanting in the extreme South-west.

The old birds figured in the Plate are from specimens in Dresser's collection, from Piedmont and Turkey. The hinder figure, which represents the young in its first winter's dress, is drawn from one of Sharpe's Damara specimens.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a. Piedmont, May 1870 (*T. Salvadori*). *b*, ♀. Asia Minor, May 30th, 1864 (*T. Robson*).

6

E Mus. R. B. Sharpe.

a, ♂. Ondonga, Ovampo, November 28th, 1866 (*C. J. Andersson*). *b*, ♀. Elephant Vley, Damara Land, November 11th, 1859 (*C. J. A.*). *c*, *d*, *e*, *f*, ♂, ♀. Objimbinque, Damara Land, February 10th and April 1st, 1864 (*C. J. A.*).

E Mus. J. H. Gurney, jun.

a. Nice. *b*. Young bird, figured in Professor Newton's edition of Yarrell.

E Mus. Hanbury Barclay.

a, ♀. Corfu (*Spiro Gallia*).

E Mus. T. E. Buckley.

a, ♂. Prawady valley, April 26th, 1869 (*T. E. B.*).



LANIUS COLLURIO.
XXIX

LANIUS COLLURIO.

(RED-BACKED SHRIKE.)

Lanius collurio, Linn. Syst. Nat. i. p. 136 (1766).
Lanius spinitorques, Bechst. Naturg. Deutschl. ii. p. 1335 (1805).
Lanius dumetorum, Brehm, Vög. Deutschl. p. 234 (1831).
Enneoctonus collurio, Boie, Isis, 1826, p. 973.

Red-backed Shrike, *Butcherbird*, English; *Pie-grièche écorcheur*, French; *Der rothrückige Würger*, German; *Brunryggad Tornskatan*, Swedish; *Pienempi Lepinkäinen*, Finnish; *Sorokopood Joolan*, Russian; *Graauwe Klaauwier*, Dutch; *Averla piccola*, Italian; *Tistazza nicca*, Sicilian.

♂ pileo clarè cano, anticè albido, fronte loris et regione paroticâ nigerrimis: interscapulio, scapularibus et tectricibus alarum superioribus rufis: dorso imo cinereo: remigibus brunnescenti-nigris, secundariis externè rufo marginatis: rectricibus nigricantibus, versus basin albis, externis albo marginatis et apicatis, duabus medianis omninò nigris: subtùs pulchrè rosaceus: mento, abdomine imo cum tectricibus subalaribus et subcaudalibus purè albis.

♀ suprà sordidè rufescenti-brunnea, collo postico uropygioque grisescentibus, hôc obscuriore, lineis parvulis nigris transfasciato: fronte, loris et superciliis albis: subtùs omninò albescens, genis, pectore superiore et hypochondriis nigris transversè vermiculatis: caudâ rufescenti-brunneâ, rectricibus externis angustè albo marginatis.

Jun. similis feminæ adultæ, sed pallidior, et suprà fasciculis ochraceis et nigris transfasciata.

Male. Head, back and sides of neck clear blue-grey, a little whiter on the fore part; middle of the back and scapulars dull brick-red; lower part of the back grey; wing-coverts black, very broadly edged with rufous; quills blackish, underneath white at the base, primaries edged with a very narrow line of fulvous, secondaries with red like the back; tail blackish, all but the two middle feathers white at the base, this colour predominating on the external feathers, the outer one being edged and tipped with white; a narrow frontal line, feathers between the bill and the eye, extending underneath the latter, and the ear-coverts jet-black; chin, lower part of abdomen, and under wing- and tail-coverts white; rest of the under surface of the body beautiful delicate rose-colour; bill and legs black; eyes brown. Total length 7·2 inches, culmen 0·6, wing 3·7, tail 3·2, tarsus 0·95.

Female. Entirely different from the male, brownish grey above, clearer grey on the hinder part of the neck and lower portion of the back; tail brownish red above, greyish beneath, tipped with whitish; underneath white, without any suffusion of pink, the feathers of the sides of the neck, upper part of the breast, and flanks transversely marked with spade-shaped vermiculation of brown. Total length 6·9 inches, culmen 0·6, wing 3·7, tail 3·0, tarsus 0·95.

The very adult female, however, sometimes assumes a plumage nearly approaching that of the male; and Mr. Blyth (Ibis, 1864, p. 412) states that he has found breeding females nearly similar in plumage to the adult male. This fact has also been remarked by various German naturalists.

2

Young. Above generally reddish brown, the whole plumage downy and soft, the feathers of the head and neck transversely banded with ochraceous brown, and the whole upper surface crossed with black transverse vermiculations broader on the back; the frontlet and eyebrow obliterated; cheeks dark reddish, barred across with black and streaked with fulvous; wing-coverts black, marked with a black line before the red edging to the feather; quills dark blackish brown edged with rufous; tail more distinctly reddish brown tipped and edged with fulvous, before the apex of each feather a black transverse bar; underneath pale fulvous, the breast and flanks crossed with irregular brown vermiculations; bill and legs lead-coloured; iris light brown. Total length 7·2 inches, culmen 0·6, wing 3·7, tail 2·9, tarsus 0·9.

Like the Woodchat the Red-backed Shrike is a common summer visitant to Europe, extending its range, however, further north than the last-named bird. In Great Britain it is our commonest species, and is generally distributed over most of the southern and central counties. Mr. More (Ibis, 1865, p. 17) states that it "breeds only occasionally in Cornwall, and is apparently not found in Lincolnshire. Mr. Eyton describes it as very common in Wales; thence northward it becomes rare, nesting only occasionally in Westmoreland, Cumberland, and Durham, and is not included in the Northumberland list."

Respecting its range in Great Britain, Lord Lilford writes to us as follows:—"*L. collurio* is gradually extending its range northward in England. I have heard on good authority of its having been seen in this county (Northamptonshire) once or twice in the last five years; but I never met with it here in my birds'-nesting days, when I flatter myself I knew of almost every bird that nested within miles of this place. The common Turtledove, which I never saw in those days, is now quite common here in summer; the first I heard of was seen about twelve years ago."

But very few instances are known of its having bred in Scotland. The Rev. J. Dunns speaks of having once seen a pair during the breeding-season in Berwickshire, and says, "Mr. Robert Grays tells me that a pair frequented a hedgerow near Dunbar during the breeding-season of 1852;" and Mr. J. R. Pencaitland has ascertained that the nest has been once found in Haddingtonshire.

E. R. Alston writes to us:—

"Only appears in Scotland as a rare, accidental visitor. One was killed in Forfarshire in June 1862 (Zoologist, 1864, p. 9360), one in Shetland by Dr. Saxby, in October 1866 (ibid. 1867, p. 689); and I have heard of one or two others."

In Ireland it has apparently not yet been met with, as it is not included by Thompson.

Throughout the greater part of continental Europe the Red-backed Shrike is found during the summer season. In Scandinavia Westerlund states that it has not been observed further north than lat. 20° N. Nilsson says that it is "common in the south of Sweden, but rarer towards the centre of the country. It is said, however, to be numerous in Dalecarlia, as also near Christiania. It is also abundant on Gothland. It is a migrant, leaving early in September and returning about the middle of May."

Mr. R. Collett says that it is one of the commonest of the migrants occurring near Christiania, and arrives seldom before the 20th of May, and often at the end of that month, the larger number leaving again late in August, a few remaining until early in September. They breed near Christiania. Kjærbölling also remarks:—"It is one of our commonest birds, arriving early in May, leaving in August, or at latest early in September."

Mr. H. M. Labouchere says it frequents the wooded parts of the dunes or sand-hills in the northern provinces of Holland, where it breeds.

During the summer it is found throughout France; and Jaubert remarks that in Provence it is principally migratory, though a few remain to breed. Lord Lilford informs us that "it is common on the Spanish slopes of the Pyrenees, in Guipuzcoa, Navarre, and Aragon. I never met with it in any other part of Spain." Indeed in Southern Spain it is decidedly rare, and it is evident that the line by which the bulk of the migration arrives in Europe does not lie in this direction. It is not included in the list of birds of Andalucia sent to us by Major Irby; and Mr. Howard Saunders thus writes:—

"I never observed this species in any part of Southern or Central Spain, nor even in the north-east portion, where I certainly expected to find it, until I learned from Dr. Louis Companyo, of Perpignan, that it was very rare even on his side of the Pyrenees."

Mr. C. F. Tyrwhitt Drake, writing on the Birds of Tangiers and Eastern Morocco, says he saw it "at Martine in summer."

From Mr. C. A. Wright's Appendix to his 'List of Birds observed in the Islands of Malta and Gozo,' we take the following note:—

"Some years ago I purchased in the Malta market a bird which appeared to be a female (young) of this species. This was in the autumn. The specimen was in a too advanced state of decomposition to be preserved; and not being quite certain of the species, I did not feel justified at the time in admitting it into the list. Since then I have seen an undoubted example, which had been killed in Malta, in the collection of Signor Schembri, who had obtained it after the publication of his Catalogue in 1843. This bird may therefore be considered as an accidental visitant."

Count Salvadori tells us that it is very common in Italy from May to September. Professor Doderlein observes:—"It is far from common in Sicily; and although a few pairs nest in the wooded districts about Gonato di Castelbuono &c., yet in the neighbourhood of Palermo and Messina it is positively rare, whatever Malherbe may say to the contrary; as a proof of which I have only been able to obtain a single pair in four years for the University Museum at Palermo."

In Greece, Lindermayer remarks that it is common in Roumelia and on the island of Eubœa, but does not occur on the other islands. Mr. C. A. Wright also says "it is very common in autumn in the neighbourhood of Athens, whence I have received specimens."

The late Mr. Strickland met with it at Smyrna in April; and in Palestine, Dr. Tristram writes, "The Red-backed Shrike is most abundant on the high grounds of Hermon and Lebanon, where it supplants all the other species—but only in summer, as it returns in May, and we obtained the eggs as late as June 20th. On the 16th of May, Mr. Bartlett and I took ten nests of eggs in one forenoon near Lake Phiala on Hermon."

Lord Lilford says it arrives in small numbers in Corfu in April, and remains to breed; and Messrs. Elwes and Buckley, in their paper on the Birds of Turkey, observe:—"We shot only one specimen at Belgrade, on April 22nd; but Mr. Robson says it is common in summer."

Professor von Nordmann says it is found "throughout all New Russia, where it nests in the hedges."

Its eastern range extends far to the eastward of the Ural Mountains, as, according to Pallas, it is a common bird in the temperate parts of Siberia.

In winter it migrates far into Southern Africa, following apparently the eastern coast.

Mr. C. W. Wyatt, in his paper on the Birds of Sinai, says:—

"I picked up a dead specimen of this species, April 1st, in Wady Lejah. It was evidently a last year's bird. The dryness of the air would account for its preservation." Mr. E. C. Taylor writes to us as follows:—

"This Shrike I have never seen in Egypt, nor have I ever heard of its having been obtained by any one else. In Egypt the Shrikes are:—*Lanius lahtora*, which is resident throughout the winter, but not by any means common; *Lanius auriculatus* and *L. nubicus*, both of which are spring visitants, arriving in March, when they are very abundant; *L. auriculatus* I have found in very great numbers in the Delta towards the end of March."

Mr. Jesse obtained specimens of this species in Abyssinia in April, and Mr. Blanford in August, both doubtless on their migrations. Dr. von Heuglin says it is one of the common birds of passage in North-eastern Africa, and he found it in Egypt, Arabia, on the islands of the Red Sea, in Bogos Land, Abyssinia proper, Nubia, and southward into the districts of the Nile and Gazelle rivers. "They appear," he writes, "very early in August, both old and young birds together, and in March and April they return through Egypt. Whether single pairs breed here or not I cannot say with certainty; but I observed in the Delta and on Dalak, in the middle of August, young birds which were scarcely able to have undertaken a sea-voyage."

Dr. Kirk has obtained it at Shupanga, in the Shiré region. Mr. Ayres has sent it from Natal, where, he says, it is "tolerably abundant the whole year round." If this is really the case, then some few birds must remain in South Africa when the bulk of their number go northwards; and this would be a curious fact, as there is not the slightest doubt about the specific identity of the specimens killed in Europe and Southern Africa.

Mr. Gurney sends us the accompanying note from the late Mr. C. J. Andersson's MSS. now in his possession:—

"*Lanius collurio* visits Damaraland and Great Namaqualand in the rainy season, and breeds about the river Okavango." It has also been sent from Angola by Senhor Anchieta, who obtained it at Biballa and Caconda.

Mr. Layard tells us that it is found throughout the eastern districts of the Cape Colony. He obtained it himself in the Blackwater round Eland's Post, Alice, and the Kat-berg generally, also in the localities indicated by Levaillant, namely the Sunday and Zwartkop rivers, near Port Elizabeth. Mr. J. J. O'Reilly, one of his correspondents, forwarded it to him from Graaff Reinet. It does not appear in the western districts.

That the present species, as first stated by Levaillant, breeds during its residence in South Africa is certain; and Sharpe, in his recent review of Dr. von Heuglin's 'Ornithologie Nordost-Afrika's,' was undoubtedly wrong in disbelieving this statement; for not only does Mr. Andersson's note above given afford direct confirmation of the fact, but our friend M. Jules Verreaux tells us that it breeds abundantly in Southern Africa; moreover he says it is a very common bird there at certain seasons, and he used to consider it a useful ally for the capture of insects, as by

visiting its larder he was able to secure many rare species, some of which he only obtained thus, and never saw them again.

Both Meyer and Morris (*vide* Morris, Br. B. i. p. 234) speak of this bird as an inhabitant of North America. This statement, however, rests upon no good authority, and it is scarcely necessary to point out how utterly erroneous it is.

The Red-backed Shrike arrives in Europe in April, or early in May, remaining to breed, and leaving again in August for a more congenial climate. At that time they depart in families, and old birds and young may be seen in the autumn on the south coast, preparing to take their flight abroad. Some of the young ones are then still fed by the parents. It inhabits fields over which bushes are scattered, but particularly loves the dense thickets of thorns which are often to be seen overgrowing some old quarry or gravel-pit. The male, who is more often observed than the female, sits on the highest point of the bush, uttering a monotonous clucking note, and when disturbed moves with a dipping flight, only to take up his position once more on the next available twig. They frequent hay-fields towards the close of the day, and from a telegraph-wire or hedgerow pounce down and capture the insects which then begin to make their appearance over the cut grass. They never affect the forests.

The flight is a continuation of half circles, and renders it distinguishable from other Shrikes. Naumann gives its note as "*gäck, gäck,*" and its call-note "*kräu*" or "*täng,*" and says it is a more accomplished mimic than all the other *Lanii*, exercising this habit even in confinement. Professor von Nordmann says that it imitates the cry of the Quail. Mr. Collett remarks that the song of the male is sweet; and he compares it to that of the Whitethroat, and says it mimics the song of birds that are found in the neighbourhood.

Its mode of living is chiefly insectivorous, though it will occasionally devour field-mice and small birds. Of grasshoppers it is especially fond, and may be seen late in the summer evenings amongst the new-mown hay in the hay-fields hunting systematically after these insects. According to Naumann it is fiercer than *Lanius rufus* or *L. minor*, and not only catches young birds, but hunts down full-grown ones when it can succeed in so doing, and will steal birds out of snares.

Mr. C. E. Diezel (J. f. O. 1856, p. 84) gives the following account of this Shrike attacking a lizard, witnessed by a friend of his:—"My friend, passing along a country road, witnessed a Red-backed Shrike fluttering wildly, and in vain attempting to rise from the ground, being prevented by a middling-sized lizard (*Lacerta agilis*), who held it fast. My friend's dog rushed in and brought the bird to his master, the lizard still retaining his hold. On examination it proved that the lizard had bitten a firm hold on the lower mandible of the Shrike, and could no more release itself than could the Shrike from the lizard; and they had to be forcibly detached. This being done the lizard ran back into the hedge apparently uninjured."

Schlegel accuses this Shrike of stealing bees from the hives.

The nest of the Red-backed Shrike is large for the size of the bird, and is composed of straws, moss, and dry bents, carefully lined with wool, fine moss, and horsehair. It is generally placed in a large bush, seldom above four or five feet from the ground, and only exceptionally as high as from eight to ten feet. The eggs, from five to six in number, are subject to considerable variation in colour and markings, the reason for which has given rise to much discussion

amongst the German ornithologists. We give the following varieties from the collection of Mr. Dresser:—

A. Ground-colour light grey with a faint greenish tinge, the underlying shell-markings light violet, and but few darker surface-spots.

B. Ground-colour rather darker than the above, the surface-spots being darker and more extended.

C. Ground-colour light yellowish white, slightly marked with light violet shell-spots and light reddish brown surface-markings.

D. Ground-colour pale salmon-colour, with extended violet shell-spots and large red surface-spots.

E. Ground-colour pale rosy white, with but few shell-spots and large, extended dark red surface-spots.

F. Similar to var. E, but the surface-spots are larger and of a bright blood-red colour.

According to Naumann and many other German oologists the eggs vary according to the age of the female, a young female laying eggs similar to var. A the first year, and continuing year after year to produce eggs altering gradually from varieties B to F, only very old females producing those as rich-coloured as var. F. Much weight should be attached to the opinion of so accurate an observer as Naumann; still the results of investigations made by other reliable naturalists make us hesitate before we indorse this theory.

Pastor W. Pässler, who holds the same opinion as Naumann, states (J. f. O. 1858, pp. 43–45) that he had ample opportunities of observing Shrikes which bred annually in his garden, and had convinced himself that the first year the female produced very small, light-greenish eggs, with ash-grey shell-spots and no surface-markings, resembling eggs of *Sylvia nisoria*. The second year the same female produced brighter-coloured eggs, which, besides the slate-grey underlying shell-spots (which are present in all stages of coloration), had greenish surface-spots. The third year the ground-colour of the egg was yellowish, and the green surface-spots mixed with yellowish. The fourth year the ground-colour was pale yellow, and the markings much brighter. The fifth year the ground-colour became yellowish red, and the markings the same, only darker; and only after this did the female produce eggs with reddish ground-colour and red spots, which year after year became brighter red, the eggs of very old females being marked with blood-red.

On the other hand, Lieut. A. v. Homeyer (J. f. O. 1858, p. 324) holds the opinion that the age of the female has nothing whatever to do with the colour of the eggs, and as an instance adduces the fact that hundreds of eggs he saw in the Berlin Market were of the red variety, some marked with intense blood-red colour, whereas but very few belonged to the grey variety—also that out of twenty clutches of Red-backed Shrike's eggs taken in Pomerania (at Vorland) not one egg belonged to any other than the grey variety (A or B).

Mr. van Preen likewise observes (J. f. O. 1863, p. 291) that he shot very mature females, wearing a plumage nearly approaching to that of the male, from nests containing eggs of the grey variety, and that he found eggs similar to varieties B and C belonging to females of various ages.

Thus the matter still remains in great obscurity; and we can only recommend further investigation, at the same time remarking that there is great difficulty in ascertaining with any

degree of certainty the identity of the bird year after year, and that it is very possible that one of the young birds may replace its parent in the nesting-place.

Mr. R. Collett kindly sends us the following note on the nesting of the present species:—

"The very day after its arrival, which takes place about the 17th to the 20th of May, it begins to prepare its nest. I have found one placed on a large root amongst high grass. I once saw one in Denmark fix a mouse on a thorn—which I have never elsewhere observed. The materials of the nest differ considerably according to the locality. I once took one in which were pieces of ribbon, flannel, and wool-threads, &c. &c."

For the following interesting account of its breeding-habits we are indebted to Mr. A. W. Johnson, of Gateshead, who writes:—

"The Red-backed Shrike commences breeding in Kent about the 15th of May. The nests are most commonly found amongst the thick brambles growing in deserted gravel-pits, which are of frequent occurrence in that county, but they are also occasionally found in hedges, invariably within a short distance of a brook and near a road. In the above district the well-known variations were found to be in about the following proportions:—Only one nest in seven contained the red variety; one in four, eggs with the pale green ground; and the greater part by far, those with the white ground. The nests in which the white variety were taken were always composed of 'cliva,' never of moss, as the pale green were. The complement of eggs is from five to six, usually the latter.

"They rear only one brood in the year. The birds appear, even if robbed, to come back to the same bramble or bush year after year. An anecdote told me is, I think, worthy of repetition. A Red-backed Shrike was observed intently watching a bird-catcher arranging his lures. After fastening his decoy-bird he retired, when the Shrike immediately flew over to the latter, and with one blow laid him dead."

We have ourselves known of instances of the present species pouncing down after the bird-catcher's decoy-birds. On the 11th of November 1869, which is a very late date for a Red-backed Shrike to be found in England, a young bird of this species pursued a Wren into a hedge, and, after a spirited chase, succeeded in forcing the little bird to fly, when, their course taking them across the nets, both pursuer and pursued were captured, and brought to us.

Specimens in our own collection have formed the subjects of the accompanying Plate. The adult birds described are also in our possession; but the description of the young bird is taken from a specimen preserved soon after its leaving the nest. It was kindly lent to us by Messrs. Salvin and Godman, who procured it at Hampstead in 1854. As the bird progresses towards maturity it gradually loses the mottled appearance, and becomes more and more like the old female. A specimen in our collection, caught at Hampstead in August 1869, is assuming the brownish red head, and is decidedly of a darker rufous on the back, the dark transverse lines becoming gradually narrower. The wings have also lost most of the rufous edging on the outer web; and the tail is much darker; while on the underside of the body the vermiculations are much more distinct, and developed further down on to the flanks; the bill is also much darker brown, with scarcely any trace of yellow on the lower mandible. The characters are still further developed in another young bird in our collection, caught at Hampstead on the 6th of September 1869. A specimen in Mr. Howard Saunders's collection, from the Volga, has nearly lost every

trace of the juvenile cross-barrings, and is of a uniform dull reddish-brown above, a little paler and more grey on the nape and rump. This bird is a female, shot in May, and is very probably a very late-bred bird of the preceding year.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, b, c, d. Cookham, Berks. (*W. Briggs, R. B. S.*). *e.* West Drayton, Middlesex, killed by flying against a railway-engine (*R. Paraman*). *f, g, h, i.* Hampstead (*Davy*). *j.* Pagham, Sussex (*R. B. S.*). *k.* River Volga (*Moeschler*).

E Mus. Salvin and Godman.

a. juv. Hampstead, 1854 (*O. S.*).

E Mus. Lord Lilford.

a. ♂. Valle de Tena, Aragon, June 1867 (*L.*).

E Mus. H. B. Tristram.

a. ♀. North side of Mount Hermon, June 6, 1864 (*H. B. T.*).

E Mus. Howard Saunders.

a. ♀. River Volga, May 1869 (*Moeschler*).



LANIUS AURICULATUS.

III

LANIUS AURICULATUS.

(WOODCHAT SHRIKE.)

Lanius auriculatus, Müll. Syst. Nat. Suppl. p. 71 (1766).
Enneoctonus auriculatus, Gurney, Ibis, 1868, p. 159.
Lanius pomeranus, Sparrm. Mus. Carls. t. i. (1786).
Enneoctonus pomeranus, Cab. Mus. Hein. Th. i. p. 73 (1851).
Lanius rutilus, Lath. Ind. Orn. i. p. 70 (1790).
Lanius ruficeps, Bechst. Naturg. Deutschl. ii. p. 1327 (1805).
Lanius ruficollis, Shaw, Gen. Zool. vii. p. 316 (1809).
Phoneus rufus, Kaup, Natürl. Syst. p. 33 (1829).
Enneoctonus rufus, Bonap. Comp. List B. Eur. and N. Am. p. 26 (1838).
Lanius melanotos, Brehm, Vög. Deutschl. p. 238 (1831).
Lanius rutilans, Temm. Man. d'Orn. iii. p. 601 (1840).
Enneoctonus rutilans, Cab. Mus. Hein. Th. i. p. 73 (1851).
Lanius badius, Hartl. Journ. f. Orn. ii. p. 100 (1854).

Pie-grièche rousse, French; *rothköpfiger Würger*, German; *Rodhovedet Tornskade*, Danish; *Averla capirossa*, Italian; *Picanso*, Portuguese.

Mas fronte, regione parotica, colli lateribus et interscapulio nigerrimis: pileo cum collo toto postico lætissime castaneis: scapularibus uropygioque clare albis: dorso postico cinereo: tectricibus alarum nigris anguste albo marginatis: remigibus brunnescenti-nigris, primariis ad basin albis, externe speculum album formantibus, secundariis albo anguste marginatis et apicatis: rectricibus brunnescenti-nigris, parte basali et apicibus omnium præter duas medias albis, exteris etiam albo marginatis: loris albis: corpore subtus omnino albo, fulvo tincto: rostro et pedibus brunnescenti-nigris.

Fem. mari similis, at coloribus dilutioribus: fronte, genis, et interscapulio nigris rufo-tinctis.

Juv. brunneus, ochraceo et nigro transversim vermiculatus, tectricibus alarum rectricibusque nigris rufescente marginatis et nigro vermiculatis: scapularibus et uropygio pallide ochrascentibus: subtus ochraceus, nigro vermiculatus, gula tantum cum tectricibus subalaribus et subcaudalibus fulvescentibus.

Adult Male. Crown of the head and back of the neck, extending downwards on to the upper part of the back, very rich chestnut; lores white; forehead, space round the eye, ear-coverts, sides of the neck, and space between the shoulders jet black; scapulars and rump pure white; lower part of the back and upper tail-coverts grey; wing-coverts blackish brown narrowly edged with greyish white; quills blackish brown, white at the base, the basal part of the primaries white on the outer web, thus forming a very distinct alar bar, the secondaries narrowly edged and tipped with white; tail dark blackish-brown, all but the two centre feathers white at the base and tipped with white, the latter colour predominating on the two outer feathers, the exterior one being almost wholly white with only a blackish mark on the inner web; beneath pure white with a slight fulvous tinge; bill and feet dark brown.

Female. Similar to the male, but has all the colours less bright, and the forehead, and the parts generally of the body which in the male are black, dull blackish brown with an admixture of rufous.

Young. Brown above, inclining to rufous on the head and back, transversely barred with ochre and black vermiculations; scapularies and rump paler and more fulvous, the bars broader; wing-coverts black, broadly edged with rufous, and washed, especially on the least coverts, with ochre; tail brownish black, the middle feathers tipped with rufous, the others with fulvous white, especially on the outermost, which has a little black only on the inner web; underneath fulvous thickly barred over the whole body with narrow brown vermiculations; chin and under wing-coverts white; under tail-coverts rather deep fulvous.

Throughout Central and Southern Europe the Woodchat Shrike is found during the summer season, but is more common in some parts than in others. It breeds regularly in Holland, Belgium, the Rhenish Provinces, Central and Southern Germany, Italy, Sicily, Southern France, Spain, and Portugal, as well as in Malta and Northern Africa, over which latter country it is generally distributed. Captain Shelley informs us that he found it "more abundant in Nubia than in Egypt; but it is tolerably plentiful in both countries." In Palestine it is a regular summer migrant, remaining to breed. To the eastward it extends to the provinces of the Black Sea; and these appear to constitute its furthest range in this direction. Northwards it reaches Northern Germany and Pomerania; and Kjoerbolling cites one instance of its occurrence in Denmark, while in other parts of Scandinavia it has not yet been observed. It occasionally visits this country, and Yarrell gives several instances of its capture in the British Islands. We have received a letter from our friend Mr. J. Gatcombe, of Plymouth, relating to a Woodchat Shrike taken near that town. He writes:—"A few years since, in the early autumn, I obtained a female Woodchat which had been caught by a bird-catcher in the neighbourhood of Plymouth. It appears to have come down after his call-birds. Its plumage was very poor, and much worn." This specimen is now in the possession of Mr. J. H. Gurney, jun., and appears to be a young bird of the year, as it retains some of the characters of the immature plumage. It is scarcely to be supposed that it can have been bred in England, but may possibly have been blown across from France.

The winter home of the Woodchat appears to be Africa, though how far it extends its range southward has yet to be ascertained. Levaillant states that it occurs in South Africa; but we doubt the accuracy of this assertion, as no one has since met with it, and it has never fallen under the notice of Mr. Layard, who has so carefully investgated the avifauna of that region. In Western Africa it certainly is not rare, for Sharpe's collection contains several specimens from the river Gambia. Ornithologists have been wont to consider the bird from Senegal to be specifically distinct; and Temminck called a Shrike from this locality *Lanius rutilans*, by which name Woodchat Shrikes from the Gambia are generally known. On critically examining the descriptions given by Temminck, however, we find that he had not a specimen before him, but founded his *L. rutilans* on the *Pie-Grièche rousse de Sénégal* of Buffon (Pl. Enl. 477. fig. 2).

A glance at this plate shows that the bird figured is not a Woodchat; and it does not look like an African Shrike at all. There is just the chance of there being such a species in Senegal; but we confess we have very little confidence in Buffon's species, and it looks much more like one of the Rufous-tailed Shrikes of the subgenus *Otomela*. We are inclined to believe that on the western side of the African continent the Woodchat Shrike wanders as far as the Gold Coast in winter; for Dr. Hartlaub has examined a specimen from this locality which he was at first

disposed to consider undescribed, but afterwards referred it to the ordinary species. All the Woodchat Shrikes we have seen from Senegal are in full winter plumage; for, although we have not found any published notice of the fact, it is quite certain that the Woodchat Shrike puts on a winter dress; and remains of this garb are to be seen on specimens shot in Europe in the spring of the year, in the shape of narrow fulvous edgings to the plumage.

Dr. von Heuglin (Orn. N.-O. Afr. p. 474) says:—"The Woodchat Shrike comes into our limits during the migration from August to April, has been observed as far south as 50° S. lat., also both in the Nile district, Arabia, and on the islands of the Red Sea. To some extent it may be a resident in the tropics."

Mr. C. W. Wyatt also writes to us as follows:—

"I once shot one in Sinai, at W. Feiran, March 1st. I never saw the bird before or since; and it must have been, I think, an accidental visitor, and may have wandered up from the Ghor, where I remember seeing it seven or eight years ago."

The present species varies in size. Thus Mr. Gould (B. of Gr. Br. part 2) says that specimens from Tangiers are smaller than others in his collection from Eastern Europe; but we find slight variations in size in specimens from the same localities, and examples from Algeria are identical with others from Holland and Egypt, with which we have compared them.

According to Degland and Gerbe, it inhabits all the temperate and southern part of France, is common in Lorraine, near Montpellier, in Provence, the high and low Pyrenees, and is not rare near Lille, where it breeds.

Lord Lilford informs us that it is the common Shrike of Southern and Central Spain; and Dresser observed it often near Madrid. Along the whole of the Mediterranean it is a common summer resident; and Salvadori remarks that it is the first Shrike to arrive in Sardinia.

In a recent letter the latter gentleman also writes:—"This bird is very common in Italy during the whole summer. It is to be found everywhere except in mountainous districts. They generally build their nests on high trees. They feed on insects, especially on grasshoppers. In autumn they are very fat, and much esteemed for the table. For that purpose they are taken either in snares or on limed twigs with a grasshopper as a bait."

In Southern Austria and Styria Dresser found it not uncommon in the month of April, and was told that it bred in the latter place.

Lindermayer (Orn. Griech. p. 114) says that "in Greece the Woodchat comes with *L. collurio* from the south. Many pairs remain to breed; but most go further north."

Von der Mühle (Orn. Griech. p. 78) also observes that it is "not uncommon in the higher regions of Greece, as, for instance, Tripolitza, where it is found everywhere on the black-thorn bushes, and where it often breeds."

Mr. Robson, of Ortakeny, writes to us as follows:—

"This species inhabits Turkey in Europe and Asia Minor, a few specimens being shot during the spring and autumn migrations. They are a scarce bird with us; and only a part of their number stay over the summer and remain to breed. They prefer light copse-wooded districts, and feed on beetles, sitting long on a bush or low tree watching for the latter, which they seize on the wing and on the ground. They are shyer than the ordinary Shrikes, and keep more in covert."

Von Nordmann, in Demidoff's 'Voyage dans la Russie méridionale,' remarks that "it is one of the least common birds of New Russia, and does not pass the winter there,"—also that it is more distributed in the provinces on the east coast of the Black Sea, where he believes that it is stationary.

Naumann states that in Germany it is a bird of passage, arriving in April and leaving in August, or early in September, coming singly, travelling by night, and when leaving in the autumn migrating in family parties.

In its habits the Woodchat Shrike much resembles the other *Lanii*, and, like those, makes his habitation in the open country and in fields where low bushes and trees are found. Though not so powerful as the Great Grey or Lesser Grey Shrike, it brooks no intruders near its home, and will attack and drive away Crows, Magpies, and other large birds. In gardens close to habitations it makes itself quite at home, and is of considerable utility as a destroyer of injurious insects, though it is sometimes accused of helping itself to bees, if a hive is in the neighbourhood.

It affects bushes more than the other Shrikes, and is not often seen like them sitting conspicuously on the top bough of a bush, or on an exposed dead branch of a tree, but hides amongst the foliage, and when sitting will jerk and spread its tail, throwing it first on one side and then on the other.

Its food consists of coleopterous insects, grasshoppers, butterflies, and other insects, which it either picks up from the ground, or catches on the wing with great dexterity.

Naumann (*loc. cit.*) remarks as follows:—"In cold wet weather it robs the nests of small birds, or catches weakly young birds which have recently left the nest; but neither it nor *Lanius minor* ever catch full-grown birds. It does not go so far into the fields after insects as *Lanius minor*, nor does it hover over one place like the latter Shrike, and is fond of spitting a superabundance of food on thorns.

"It often bathes, and will wet its plumage so that it has a difficulty in flying. Its note is *krähts, krähts*, and its alarm note *grack kjäck kack*. It sings often, and mimics closely the song of other birds, mixing their notes with its own, and thus making a low, peculiar, and not disagreeable song. It seems to recollect the song of other birds well, as I heard it early in April mimic *Sylvia hippolais*, when none of these birds had yet made their appearance, or been heard that year."

Its nest is a neat but slight structure, composed entirely of plants, often of a sweet-smelling species. Several nests which Dresser took near Madrid in May, 1866, were composed of such plants, and lined with the same material; they were all placed in trees, near the stem, and at no great height from the ground.

Mr. Salvin (Ibis, 1859, p. 312) writes as follows:—

"It is everywhere abundant in Eastern Algeria and Tunis; it breeds in great numbers on the hill-sides in the neighbourhood of Djendeli, making a nest composed almost entirely of one material, viz. a small grey flower, which the bird collects with the stalk and entwines into its nest, employing the same for the lining. The whole structure is beautifully neat and compact."

Mr. Stevenson ('Birds of Norfolk,' i. p. 64) quotes the following note of Mr. Hunt, in his List of Norfolk Birds, as to its supposed breeding in England:—"Mr. Scales assures me that he has killed this rare species in the neighbourhood of Beechamwell, where he has known it to

breed and rear its young; and though we cannot procure any really authentic account of its breeding in the British isles, we think it not improbable that it has bred here."

Mr. Howard Saunders has given us the following note on the Woodchat as observed by him in Spain:—

"*Lanius auriculatus* arrives in Spain early in April, and swarms throughout the country. Even on the mud flats at the mouth of the Ebro, wherever the detritus can support a scanty vegetation, this bird is to be seen flitting from one shrub to another, invariably perching on the highest branch (such as it is, where nothing grows above one's waist). I do not suppose it nests there; but what it was doing at all, some miles away from the mainland (and in the middle of May too), quite puzzles me. The complement of eggs is five; the nest, often very prettily adorned with flowering plants, is placed in a fork of any branch of almost any tree; there is never any apparent attempt at concealment, though some nests do not catch the eye so readily as others."

The eggs of the Woodchat Shrike, from four to six in number, are in size about similar to those of *Lanius collurio*, varying from 1 inch $\times \frac{28}{40}$ down to $\frac{35}{40} \times \frac{27}{40}$, and are not easy to distinguish from the blue-grey varieties of the eggs of the latter bird. Eggs of the reddish variety, however, so common in series of those of *Lanius collurio*, are of very rare occurrence. The general type of the Woodchat's egg has the ground-colour dull blue-grey with a faint green tinge, and is spotted and blotched with dark grey and brown, these markings being generally collected round the large end so as to form a more or less distinct zone. Occasionally the markings are distributed generally over the surface of the egg; but these varieties are rare. Amongst the specimens in Dresser's collection we may name two, one from Holland, having the ground-colour of a pale salmon tinge, and the spots, which are but few, of a faint purple and red colour; the other, from near Madrid, has the ground-colour light clay-brown, and the spots dark grey and reddish brown.

The description of the old birds is taken from an adult pair shot in Piedmont in May 1868, and given us by Count Salvadori. Of these the old male is figured in the Plate.

We are indebted to the collection of Messrs. Salvin and Godman for the specimen of the very young bird we have described. It was procured at Valkenswaard, in Holland; and, on comparing it with the very young Red-backed Shrike, we notice, notwithstanding a certain resemblance between the two species, that at this early age they present some recognizable points of distinction. Thus the young Woodchat is generally paler in plumage, and the bars on the back are broader; the scapularies and rump, which are white in the adult, are pale fulvous in the young, and contrast with the rest of the plumage, no such difference being seen in the case of the common Red-backed Shrike. On the under surface they more closely resemble each other; but the vermiculations in the case of the Woodchat extend all over the body, and are more thickly spread than in its ally, which has the abdomen unbarred.

The figure of the young bird, which is a little older than the specimen described, is taken from a Spanish example given us by Mr. Howard Saunders.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, b. France. *c, d, e, f.* Piedmont (*Salvadori*). *g, h, i.* Granada (*Howard Saunders*). *j.* Portugal (*Moeschler*). *k, l.* Tunis (*Antinori*). *m, n.* Malta (*Wright*). *o.* Egypt (*Rogers*). *p.* Egypt (*Shelley*). *q.* Egypt (*E. Cavendish Taylor*).

E Mus. R. B. Sharpe.

a. Abyssinia (*Jesse*). *b, c, d, e.* River Gambia.

E Mus. Lilford.

a, b, c, d, e. Aranjuez (*L.*). *f.* Casa de Campo, Madrid (*L.*).

E Mus. H. B. Tristram.

a, b, c. Algiers (*H. B. T.*). *d, e, f.* Koleah, Algeria (*H. B. T.*). *g.* Kadesh, Palestine (*H. B. T.*). *h.* Banias, Palestine (*H. B. T.*).

E Mus. Salvin and Godman.

a, b. Valkenswaard (*Godman*). *c.* Constantine, Algeria (*Salvin*). *d.* Kef Laks, Algeria (*Salvin*).

E Mus. Howard Saunders.

a, b. c. Seville (*H. S.*). *d, e, f, g.* Malaga (*H. S.*). *h.* Granada (*H. S.*).



Hanhart imp

ISABELLINE SHRIKE.

LANIUS ISABELLINUS

LANIUS ISABELLINUS.

(ISABELLINE SHRIKE.)

Lanius isabellinus, Ehr. Symb. Phys. fol. E (1828).
Lanius arenarius, Blyth, Journ. As. Soc. Beng. xv. p. 304 (1846).
Otomela arenaria (Bl.), Bp. Rev. Zool. 1853, p. 437. no. 27.
Enneoctonus arenarius (Blyth), Horsf. & Moore, Cat. B. Mus. E.I. Co. i. p. 394. no. 639 (1854).
Lanius ruficaudus, A. E. Brehm, J. f. Orn. 1857, p. 79.
Lanius phœnicurus, Blasius, Ibis, 1862, p. 66 (nec Pallas).
Lanius phœnicurus, var. *montana*, Severtzoff, Turk. Jevot. p. 144 (1873).
Lanius phœnicurus, var. *caniceps*, Severtz. ut suprà (1873).
Lanius phœnicurus, var. *ruficeps*, Severtz. tom. cit. p. 145 (1873).
Lanius phœnicuroides, Severtzoff, J. für Orn. 1873, p. 347.
Otomela isabellina (Ehr.), Schalow, J. für Orn. 1875, p. 145.
Otomela phœnicuroides (Sev.), Schalow, tom. cit. p. 148.
Lanius montanus (Sev.), Schalow, tom. cit. p. 150.
Lanius canescens (Sev.), Schalow, ut suprà.

Figuræ notabiles.

Walden, Ibis, 1867, pl. v. fig. 1; Henderson & Hume, Lahore to Yarkand, pl. 3.

♂ *ad. ptil. æst.* pileo, uropygio et supracaudalibus saturatè rufescenti-fulvidis: dorso saturatè fusco-cinereo: caudâ saturatè ferrugineâ, rectricibus centralibus fulvescentibus: remigibus nigricantibus, primariis ad basin albis speculum formantibus: secundariis intimis et tectricibus alarum rufescente cervino marginatis: loris, lineâ ad basin rostri et vittâ magnâ per oculum ductâ albo marginatâ, nigris: gulâ, gutture et corpore subtùs albis: hypochondriis et subcaudalibus rufescente cervino lavatis: rostro saturatè fusco-corneo: iride fuscâ: pedibus nigris.

♀ *ad.* suprà fusco-cinerea vix rufescenti tincta: alis fuscis, vix pallidiore marginatis: caudâ sicut in mare picturatâ sed pallidiore: loris albidis: vittâ oculari fuscâ: corpore subtùs albo, hypochondriis et pectore rufescenti-cervino lavatis.

♂ *ptil. hiem.* capite suprà et dorso cinereo-isabellinis, uropygio et caudâ sicut in ptilosi æstivali picturatis: alis pallidioribus: loris albidis: vittâ oculari minore: corpore subtùs isabellino-albo, colli lateribus, pectore et hypochondriis rufescenti-isabellinis, mento et abdomine centraliter albis.

Adult Male in summer (Chimkent, 20th April). Crown, rump, and upper tail-coverts deep rufous brown; back dull dusty brown; tail deep rufous, the central rectrices rufous brown; quills blackish, the primaries white at the base, forming a distinct speculum; wing-coverts and inner secondaries broadly margined with warm rufous buff; entire space before the eye, with a narrow line over the forehead, and a broad streak through the eye over the ear-coverts, deep black, on the upper side margined with white; underparts white, the flanks and under tail-coverts washed with rufous buff; bill dark horn-

brown; legs blackish; iris dark brown. Total length about 6·5–7 inches, culmen 0·65, wing 3·65, tail 3·2, tarsus 0·95.

Adult Female in spring (Chimkent, 5th April). Resembles the male in winter, but has the upper parts more of a rufous-isabelline tinge, the tail paler, the wings much paler and browner, and the underparts whiter.

Young Male (Lower Oxus, 20th September). Resembles the adult female, but is duller, and has blackish crescentic marks on the breast and wing-coverts.

Adult Male in winter (Etawah, 17th November). Crown, nape, back, and scapulars dull ashy brownish isabelline; rump and upper tail-coverts rufous; tail and wings as in the summer dress, but paler, the margins being warm isabelline, the primaries having also narrow light margins; lores whitish, the black streak smaller and only extending beyond the eye; sides of the head otherwise warm rufous isabelline; underparts creamy white, washed with warm rufescent isabelline on the sides of the neck, the breast, and flanks; chin and centre of the abdomen pure white.

Comparatively speaking, the range of this, the only species of Rufous-tailed Shrike found within the Western Palæarctic Region, is somewhat restricted; for it is only found from the Ural range eastward into Mongolia and southward into North-east Africa, and there is in the well-known collection of Mr. Gätke a single specimen obtained in Heligoland, which Mr. Seebohm, who has carefully examined and described it, assures me is referable to this species.

Mr. Sabanäeff informs me that it was obtained by Meves in 1872 on the frontier between the Orenburg and Perm Governments, near the Loymonobsky mining works in the Keshtemsky Dacha; and Eversmann records it from the Kirghis steppes. Mr. Meves himself writes (J. f. Orn. 1875, p. 432) that he "shot a young male, in autumn plumage, near Kirschtin, in the South-east Ural, on the 10th of August, but did not meet with any in adult plumage." I do not find any record of the occurrence of this Shrike in Asia Minor; but Hemprich and Ehrenberg obtained it in Arabia, and it is not very uncommon in North-east Africa. Vierthaler and Brehm met with it at Sennaar on the Blue Nile late in November. Strickland received it from Kordofan; and Von Heuglin records it from Bahr el Abiad and Abyssinia.

In Asia it is found at least as far as Mongolia, and possibly also occurs in Dauria. A specimen from Bagdad is in the British Museum; and Dr. Severtzoff, who obtained a considerable series of specimens in Turkestan, at first subdivided the present species into several subspecies, referring the darker specimens to *Lanius phœnicurus*, Pall., and the lighter ones to *Lanius isabellinus*; but subsequently he described (*l. c.*) the darker and rufous-headed birds as new, under the name of *Lanius phœnicuroides*, and referred, as before, the paler ones to *Lanius isabellinus*; but, as below stated, I cannot believe that there are two distinct species, and refer all to *Lanius isabellinus*. Referring to this Shrike, Dr. Severtzoff writes (Turk. Jevot. p. 145) as follows:—"The mountain form of *Lanius phœnicurus* (var. *ruficeps*) differs in being darker in colour; the back and scapulars in fresh plumage are pure brown slightly shaded with grey; but in spring these parts are greyer; the head is always brownish mixed with red, almost as rufous as the tail, which, with the rump, is dark reddish brown, with a chestnut tinge in fresh plumage. The lowland form (var. *caniceps*) has the upper parts greyer, being grey tinged with brown,

purer grey in the males and young birds; head similarly coloured; wings, tail, and underparts as in the mountain form. The mountain form inhabits chiefly the wooded portions of the Thian-shan to an altitude of from 7000 to 8000 feet; and the lowland form occurs in the bushes and thorn-thickets near Syr Darja, Mi, and Lepsa, below 1000 feet. In the cultivated districts both forms are found in gardens, and intermediate specimens may be found. As regards *Lanius isabellinus*, numbers were obtained on passage, in spring, in Chimkent and Tashkend, between the 20th February and the 20–25th March; but in the autumn it was not observed there, though it was seen in Aulje-ata early in September. It breeds in the steppes near Balchash, Chu, and Talass. Neither of the two forms of *Lanius phœnicurus* arrive in Tashkend and Chimkent before the early part of April."

Mr. Blanford, who met with it in Persia, writes (E. Pers. ii. p. 142) as follows:—"I did not see this bird in Balúchistán in the winter—which is curious, because it abounds in Sind at that season. The first time that I met with it was north-west of Bampúr; and thence it was frequently seen to beyond Shiráz; but I did not observe it in Northern Persia, and it is not recorded in De Filippi's list. It certainly breeds on the Southern Persian highlands; and I have no doubt that the pair which I shot on the 14th April had a nest close by, although I could not succeed in discovering it. The altitudes at which some birds were killed show that *Lanius isabellinus* ranges to a considerable elevation. Its habits present no peculiarity: it is found in thinly-wooded districts, and, like its relative, sits conspicuously on the tops of bushes and on prominent twigs, whence it pounces down on insects." In Sindh it is common in the winter; and Dr. Jerdon says that it is found between that country and Ferozepore, and it is apparently not uncommon in North-west India. Hayes Lloyd records it from Kattiawar; and it is said to be common on the Punjâb, but rarer in the Sutlej valley; and Stoliczka found it in Thibet in the summer season. There is also a specimen, apparently in full summer dress, from Hyderabad, in the East-India Museum. Messrs. Henderson and Hume, who figure the present species in winter dress, say (Lahore to Yarkand, p. 183) that it was only observed in the plains of the Punjâb between Cashmere and Lahore; and Colonel Prjevalsky, who obtained it in Mongolia, writes (Rowl. Orn. Misc. ii. p. 274) that it breeds in Ordos and Alashan, and is rather numerous in the Hoangho valley, still not so abundant as *Lanius phœnicurus*, Pall. He did not meet with it in China proper, and consequently supposes that the Ordos mountain-range constitutes its eastern boundary, whither it goes from Persia and Afghanistan. It appears probable that the present species occurs also in Dauria; for Dr. Dybowski sent to the Berlin Museum a pair of Shrikes obtained in Argun-Dauria in May, which were described as new by Mr. Taczanowski (J. f. O. 1874, p. 322), under the name of *Lanius speculigerus*. I have not had an opportunity of examining these specimens, which, if not specifically identical with, must be very closely allied to the present species; for Mr. Schalow writes respecting them as follows:—"In the bill and wing this species approaches *Otomela phœnicuroides*, whereas the tail, though a little longer, resembles that of *Otomela isabellina*. The male differs from the male of *Otomela phœnicuroides* in having the head and back more grey and the tail duller red. An apparently younger female has the back brownish, as in the male of Severtzoff's species. The quills are lighter brown; the underparts are rusty brown with clearly defined wavy markings on the breast, sides of the throat, and cheeks;" and he adds that the differences may merely be owing to age.

I find but little on record, except what is given above, respecting the habits of the present species; and it appears to approach the Woodchat closely in its general habits, except that it is more of a desert-bird. It doubtless breeds in Turkestan and Thibet; but I have never had an opportunity of examining authentic eggs or nests.

Mr. Schalow, in his excellent article on the genus *Otomela*, recognizes four species of these Isabelline Shrikes—*Otomela arenaria*, *Otomela isabellina*, *Otomela phœnicuroides*, and *Otomela speculigera*; but, after a most careful examination of specimens, I cannot do otherwise than unite the first three: not having examined the fourth, I cannot offer a decided opinion as to whether it should be kept separate; but it seems to me probable that it ought also to be suppressed. I was at first inclined to separate *Lanius phœnicuroides* from *Lanius isabellinus* as having a more rufous head, the underparts being whiter, while the tail, instead of being rounded or graduated, is nearly even, except as regards the outermost feathers on each side, which are at least 0·25 to 0·3 inch shorter than the rest; but on comparing a series, I find that none of these characters are constant. It appears, judging from the specimens before me, that the richer-coloured form is the old male in full spring plumage, and the isabelline-coloured bird is the female or male in winter dress. Looking over the series of adult males in summer dress I have before me, I find a great variation in tinge of colour, scarcely any two being quite alike.

The specimen described is the most brightly coloured example; but another, also from Turkestan, is nearly as richly coloured, has the inner secondaries almost devoid of the rufous margins, and differs from the one from Chimkent in having the tail regularly graduated. One shot on the 16th April differs from the one described in having the crown and back greyish without any trace of rufous; but the tail has only the two outer feathers shorter than the others, not being graduated, and the underparts are very white. Another, shot on the 5th April, resembles this grey-backed bird in every respect, except that it has the crown slightly tinged with rufous, and is, as nearly as possible, intermediate between that specimen and the one described and figured. As the adult bird in winter dress has been so well figured by Henderson and Hume, I have not thought it necessary to figure it, and have merely given the adult male in full spring dress, showing the rufous on the head very distinctly.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Tschinaz, February 22nd, 1875 (*Severtzoff*). *b*, ♂. Chimkent, Turkestan, April 16th, 1866 (*Severtzoff*). *c*, ♂ *jun.* Lower Oxus, Turkestan, September 20th (*Severtzoff*). *d*. Lahore, winter (*Marshall*). *e*, ♀. Etawah, India, November 17th, 1866 (*W. E. Brooks*).

E Mus. Lord Tweeddale.

a, *b*, ♂, *c*, ♀. Turkestan (*Severtzoff*). *d*, ♂, *e*, ♀. Chimkent, April 5th, 1866. *f*, ♂. Karadolak, Turkestan, March 5th. *g*, ♂. Chimkent, April 20th, 1866 (*Severtzoff*). *h*, ♂, *i*, ♀. Punjâb, December (*Hume*). *k*, ♂? Karjalik, May 30th, 1874 (*Biddulph*).

E Mus. Berol.

a, *b*, *c*. Gumfudde. *d*. Arabia (*Hemprich & Ehrenberg*).



LANIUS NUBICUS.

IX

LANIUS NUBICUS.

(MASKED SHRIKE.)

Lanius nubicus, Licht. Verz. Doubl. p. 47 (1823).
Leucometopon nubicus, Bonap. Rev. et Mag. de Zool. 1853, p. 438.
Enneoctonus nubicus, Cab. & Heine, Mus. Hein. Th. i. p. 73 (1850).
Lanius personatus, Temm. Pl. Col. 256. f. 2 (1824).
Lanius leucometopon, Von der Mühle, Orn. Griechenl. p. 78 (1844).

Mas supra niger: macula parva anteoculari cum genis brunnescenti-nigris: fronte et superciliis scapularibusque pure albis: tectricibus alarum superioribus nigris anguste cinereo marginatis, minoribus cinereis: remigibus nigris, ad basin albis, fasciam latam formantibus: rectricibus nigris, duabus exterioribus albis scapis nigris, duabus proximis nigris versus apicem albis, tribus centralibus nigris: gutture et abdomine albis: pectore superiore et hypochondriis læte ferrugineis: subalaribus albis: rostro et pedibus nigricantibus: iride fusca.

Juv. similis præcedenti sed fusco-nigricans, nec niger, capite paullo saturatiore.

Adult. Forehead and a distinct eyebrow pure white; upper surface of the body glossy black, very slightly inclining to grey on the lower part of the back; scapulars white; wing-coverts black, narrowly edged with greyish, the least coverts decidedly grey; quills blackish, the primaries white at the base, very broad on the outer web, forming a large alar bar, the secondaries also narrowly tipped with white; tail black, the two outer feathers white with black shafts, the next two black, all except the tips, which are white; throat, abdomen, and under wing- and tail-coverts white; the upper part of the breast and sides of the body rich ferruginous; bill and feet blackish; iris dusky brown. Total length 6·9 inches, culmen 0·6, wing 3·5, tail 3·3, tarsus 0·85.

Young. Similar to the adult, but grey where the latter is black, the eyebrow rather more pronounced, and with scarcely any white on the tail-feathers.

The Masked Shrike is undoubtedly a southern species, occurring only in South-eastern Europe. Here it is migratory, arriving in the late spring, remaining to breed, and leaving early in the autumn. It appears to pass the winter months in North-eastern Africa.

Mr. Robson, of Ortakeuy, Turkey, informs us that "the Masked Shrike is very scarce in Turkey in Europe and Asia Minor, and is only seen at intervals during migration. Like the Woodchat, they are partial to the open country, perch on low trees and bushes, preferring those which are covered with creepers, into which they can pop at the least approach of danger, and remain until it has passed, when they reappear. They are shy and very wary."

In the autumn Captain Sperling found it common in Syria; and Dr. Tristram found it abundant in Palestine during the summer season. Mr. E. C. Taylor writes as follows:—"I first saw this species in Upper Egypt about the end of February, when it had probably just arrived. It afterwards became very abundant, and was generally in pairs, but I do not think that it had begun to breed by the end of March." In Abyssinia, says Mr. Blanford, the Masked Shrike

was "seen occasionally about Komayli in January and February, and in the lower Lebka valley in August. It appeared to leave the tropical region in the intermediate period; and I did not meet with it in the highlands."

Dr. von Heuglin observes as follows:—

"Contrary to the opinion of Brehm, I consider the Nubian Shrike a migrant in Egypt and Northern Nubia. Further southward it may be sedentary; but at least north of the equator it is not to be found in winter, and generally appears here in the early part of March. In the warmer portion of Abyssinia also it arrives as a straggler in August and September. On the Nile it inhabits generally the small acacia woods in the vicinity of pasturage. It is rather a quiet, peaceable bird, subsisting on coleoptera, which it picks up off the ground, and also from the blossoms of the acacia, on hedges, and in cotton-fields."

The same naturalist further remarks:—

"The song never struck me particularly; but Krüper, on the other hand, describes it as resembling that of *Hypolais olivetorum*."

Loche records the Masked Shrike as an accidental visitor in Algeria: and Major Irby believes that it occurs in Southern Spain; but as yet no authentic specimens are known from that country.

Respecting the habits and nidification of this Shrike we give the following interesting notes by Dr. Tristram, taken in Palestine, and by Dr. Lindermayer in Greece.

The Rev. Canon Tristram writes as follows:—"The most attractive of the Palestine Shrikes is the little *Lanius nubicus*, another migrant, returning about the 20th March. Compared with its congeners it is a shy, retiring bird, preferring the inside of the bushes to the bare exposed twigs for its perch, and generally concealing itself in leafy thickets. It is very quiet, and seldom seen on the wing; but in flight the contrast of its white and black plumage and rufous under-parts has a brilliant effect. The nest is remarkably neat, like that of the Chaffinch, but of course wider and shallower, placed on a branch or fork, and lined with fine roots or fibres. The eggs, four to five in number, though Shrike-like, have a distinct character, the ground being generally olive, and the spots always arranged more or less in a zone near the broad end. They can scarcely be mistaken for those of any other bird. The Masked Shrike is confined to the upper and wooded portions of the country."

We are further indebted to Dr. Tristram for the accompanying note:—

"*Lanius nubicus* arrives in Palestine about the 20th of March, without attracting observation. The males seem to precede the females by several days, and may be detected quietly creeping about the low trees, assuming often a very upright posture. From its habits no one would suspect it of being a Shrike."

In Greece, Dr. Lindermayer states,

"This Shrike is, with the Rose-coloured Pastor, the last bird of passage that arrives with us. I have first observed it in the early part of May, on the plains in which straggling uncultivated olive-trees grow. It affects the tops of the trees, from which it gives forth a melodious, but monotonous, song. When frightened away it flies to the next high tree, but not in a line, zigzag, or horizontal curve, like other birds, but casts itself from the summit of the tree that it leaves in a bow-shaped flight almost to the ground, and thence it reaches the summit of the

next tree. Its nest it places on the highest available part of the olive-tree. It differs from that of *Lanius minor* in being smaller, and the grasses of which the nest of the latter bird is constructed are finer and drier—also in the position of the nest being at the summit of the tree and not in the middle. The eggs are six to seven in number. Like all southern birds which arrive here late and breed with us, this Shrike leaves us very early, about the middle of August. It does not occur in the islands."

To the above description of the eggs of this Shrike, by Dr. Tristram, we can add but little. We have now before us a series, in the collection of Mr. Dresser—some collected by Dr. Krüper, and some by Dr. Tristram. Those collected by the former gentleman are much smaller than those collected in Palestine by the latter, being $\frac{15}{20}$ inch in length, $\frac{12}{20}$ inch in breadth; and the spots, besides being larger in one specimen, are not collected so much in a zone as distributed over the egg. Those collected by Dr. Tristram measure $\frac{17}{20}$ inch in length, and $\frac{25}{40}$ inch in breadth.

Dr. Krüper (J. f. O. 1869, p. 30) gives the following notes:—

"The commonest of the Shrikes found at Smyrna is certainly the Masked Shrike, which I had not yet had opportunities of observing. Although this bird was found several years ago in the olive-woods near Athens (and this year a young bird was sent to the Museum), I had not seen it in any parts of Greece I visited; and it was therefore of great interest to me to watch it in a wild state. On the 20th of April, when on a trip I made with Mr. Schrader to Cordilion, I heard in a vineyard a pleasant song which appeared strange to me, although some notes much resembled the song of the Olive-tree Warbler; but as this bird had not yet arrived, I surmised that it might be a Masked Shrike, which I had expected to meet with; and indeed it proved to be that bird, though we did not kill one on this day. Later on I procured both males, females, and young. This year I first heard the song of the Shrike on the 1st of April; but most of these wanderers arrive after the middle of April. Their chief resorts are rich vineyards where there are ancient olive-trees, also Turkish cemeteries which are planted close with high cypresses. It affects plains; but I saw several pairs in the open places in the fir-woods above Burnova. At Turbali and Ephesus, perhaps on account of my short sojourn, I did observe it; but I saw it above Seidekevi. Like all Shrikes it sits generally on a dry open top of a tree, or a dead side bough, from which it utters its song, and continues it for long if undisturbed. Generally it is very shy, but can easily be approached if the ground is favourable. Its flight from one resting-place to another is bow-shaped, in performing which it descends close to the ground. Its food consists of several sorts of insects; and I have never observed it attack young birds. The young are easily reared, being very hardy; and we succeeded in bringing one, which we reared on meat (particularly fresh liver) and grasshoppers, alive to Athens. Its song is pleasing, and, as before stated, resembles that of the Olive-tree Warbler, which may arise from its frequenting the same trees as this Warbler, and, like other Shrikes, imitating the song of its neighbour. On the island of Naxos the Woodchat Shrike had got the song of the Olive-tree Warbler so exactly that I prophesied we should find this Warbler very abundant there.

"In the position of its nest this Shrike is peculiar; for it chooses the upright half-dry boughs, in the centre of which it places its nest in such a manner that it is covered from above by a branch or pendent leaves. Often the nest is placed so far from the trunk of the tree that it cannot be

reached, and a small hand-net must be used to get out the eggs. With practice the nests are easy to find. When last year I found the first nest I did not expect to discover any more. It was on the 16th May, as I saw a couple of Shrikes pursuing each other near an old Turkish burying-ground, and one flew into a moderate-sized cypress tree. I crept up with my gun, but could not perceive the bird anywhere; at last I threw a stone into the tree and the Shrike flew out. I thought there must be a nest there, which, in fact, I found, on climbing up, close to the trunk of the tree; it contained six quite fresh eggs. Later on I found other nests, and observed that none were as carefully concealed as the first one. The nest is very strongly built, so much so that it lasts in the open air for a year or two. Round the outside of the carefully formed edge, the bird plaits in threads, rags, &c., which it collects. It lays six or seven eggs, and has two broods in the year, the first in the middle of May, and again in June, in which month I found most nests as I was searching in the trees for nests of *Sylvia olivetorum*, and in the bushes for those of *Sylvia galactodes*.

"As late as the 27th of June I found a nest with fresh eggs. In the second nest it deposits fewer eggs, as I found four or five, sometimes only three. The eggs, of which I sent a number to Germany, are in size generally similar to those of *Lanius rufus*, but sometimes much less, and on a clay-coloured or whitish ground are covered with large and small spots and blotches, which form a ring at the larger end. Like those of other Shrikes they are subject to variation. The eggs of this species are easily distinguishable from those of other Shrikes."

Our description and figure of the adult is taken from a fine male bird in our own collection procured by Capt. Shelley, in Egypt, on the 8th of March, 1870, and that of the young bird from a Syrian specimen also in our own collection.

In the preparation of the above article we have examined the following specimens :—

E Mus. Sharpe and Dresser.

a. ♂. Egypt, March 8th, 1870 (*G. E. Shelley*). *b*. ♀. Egypt, April 3rd, 1863 (*S. Stafford Allen*). *c*. ♂. Palestine, May 5th, 1864 (*H. B. Tristram*). *d, e*. Syria (*Verreaux*).

E Mus. R. B. Sharpe.

a. Abyssinia (*Verreaux*).

E Mus. Lord Lilford.

a. ♂. Smyrna, May 2nd, 1863 (*Schrader and Krüper*). *b*. Egypt (*S. Stafford Allen*).

E Mus. H. B. Tristram.

a, b. Nubia (*A. Brehm*). *c, d, e*. Palestine (*H. B. T.*).

E Mus. Howard Saunders.

a. Algeria (*J. H. Gurney*). *b*. Gelamet (*Jesse*). *c*. Smyrna (*Krüper*).

Genus TELEPHONUS.

Lanius apud Shaw, Gen. Zool. vii. p. 301 (1809).
Pomatorhynchus apud Boie, Isis, 1826, p. 973.
Turdus apud Lesson, Traité d'Orn. p. 411 (1831).
Telephonus, Swainson, Classif. of B. ii. p. 219 (1837).
Telephonus, Bonaparte, Cat. Parzud. p. 8 (1856).
Telophorus apud G. R. Gray, Hand-l. of B. i. p. 398 (1869).

The species included in the genus *Telephonus* are essentially Ethiopian; and one only, *Telephonus erythropterus*, is found in the southern portion of the Western Palæarctic Region. In general habits these birds are said to differ not a little from the true Shrikes, and, unlike them, to be fond of secreting themselves in the underbrush instead of perching on the more exposed branches of the bushes and trees. Their flight is feeble and uncertain; but they are strong on their feet, and run swiftly from one bush to another. Their note consists of a harsh scream; but they also utter a song consisting of a clear, prolonged, Blackbird-like whistle. They feed on insects of various kinds, which they obtain chiefly on the ground. Their nest is bulky, constructed of twigs and roots, and lined with feathers; and they deposit several dull white eggs marked and spotted with purplish grey and reddish brown.

Telephonus erythropterus, the type of the genus, has the beak stout and strong, the upper mandible notched at the point; nostrils small, roundish, placed in the anterior part of the nasal membrane; gape furnished with stout stiff bristles; wings moderately short, broad, first quill rather short, being nearly a third shorter than the second, which is about equal to the tenth, the fourth and fifth being longest; tail long, much graduated; legs and feet stout and strong; tarsus covered in front with six plates and three inferior scutellæ; claws moderately long, strong, curved, and sharp.



HOODED SHRIKE.
TELEPHONUS ERYTHROPTERUS
96

TELEPHONUS ERYTHROPTERUS.

(HOODED SHRIKE.)

Le Tchagra, Levaill. Ois. d'Afr. pl. 70 (1799).
Lanius erythropterus, Shaw, Gen. Zool. vii. p. 301 (1809).
Pomatorhynchus tschagra, Boie, Isis, 1826, p. 973.
Telephonus erythropterus, Swains. Classif. of B. ix. p. 219 (1837).
Lanius cucullatus, Temm. Man. d'Orn. iv. p. 600 (1840).
Lanius tchagra, Schlegel, Rev. Crit. p. xxi. (1844).
Telephonus tschagra, Bonap. Cat. Ois. d'Eur. Parzud. p. 8 (1856).
Telephorus cucullatus, Gray, Hand-l. of B. i. p. 398 (1869).

Abermat, Moorish (*L. H. Irby*).

Figuræ notabiles.

Dubois, Ois d'Eur. pl. 37; Bree, B. of Eur. i. p. 171.

♂ *ad.* suprà ochrascenti-brunneus, uropygio magis cinerascente: pileo nitidè nigro: lineâ superciliari latâ albâ, posticè ochrascente: annulo ophthalmico cum maculâ infraoculari et genis anticis albidis: maculâ anteoculari et fasciâ postoculari supra regionem paroticam decurrente nigerrimis: facie reliquâ laterali et colli lateribus ochrascenti-brunneis, dorso concoloribus: scapularibus nigris, intimis dorsi colore lavatis, extùs latè ferrugineo marginatis: tectricibus alarum lætissimè ferrugineis: remigibus nigricanti-brunneis, extùs latè ferrugineo marginatis: caudâ nigrâ, conspicuè albo terminatâ, pennis duabus centralibus brunneis, sub certâ luce saturatiore brunneo transfasciatis: gulâ albâ: corpore reliquo subtùs sordidè cinereo, abdomine medio cum cruribus et subcaudalibus ochrascentibus: subalaribus et alæ facie inferiore pallidè rufescentibus: margine carpali albido: rostro nigro: pedibus plumbescentibus: iride brunneâ.

♂ *juv.* similis adulto, sed sordidior: capite brunneo, plumis paucis nigris vario.

Adult. Crown of the head and nape, as well as a stripe from the base of the bill extending beyond the ear-coverts, black; a spot below the eye, and a very broad and distinct eyebrow, white, shading into ochre on the hinder part of the superciliary streak; sides of the face and entire back ochraceous brown, inclining to ashy on the lower back and rump; scapulars black, very broadly margined with rufous on the outside, and washed with ochraceous brown; wing-coverts bright chestnut; quills black, the inner webs pale rufous at the base, the outer ones broadly margined with chestnut; tail black, all the feathers broadly tipped with white, increasing in extent towards the outermost; the two middle feathers pale brown, obsoletely barred with darker brown; chin and upper throat white; rest of the under surface of the body ashy grey, the centre of the abdomen buffy white, increasing in intensity towards the vent and under tail-coverts; under wing-coverts pale ochraceous, the lower ones inclining to rufous, edge of the wing white; bill black; feet leaden grey; iris brown. Total length 10·5 inches, culmen 1·0, wing 3·55, tail 4·9, tarsus 1·3.

Young. Similar to the adult, but the plumage more fluffy, the crown of the head brown, mixed with black;

the black streak through the eye not so distinct; the back darker brown, the feathers somewhat washed with dull ochre.

Obs. Whatever doubt may enshroud the original haunts of some of the species of birds which are now found in the Western Palæarctic Region, there can be no hesitation in discerning the locality whence the genus *Telephonus* first came into Europe. It is a peculiarly African type of Shrike, and there is apparently not a part of the Ethiopian Region where a species of this genus is absent. All over Africa there exists a small species very much resembling the Algerian bird in plumage, but always less in size, and differing notably in the length of the tarsus. In Southern Africa occurs the *T. longirostris* of Swainson, and in North-east Africa another distinct species, *T. remigialis* of Finsch and Hartlaub, is met with: again on the Gold Coast two species are found, viz. *T. minutus* of Hartlaub and *T. anchietæ* of Bocage, the latter of which has only lately been described from Angola. Captain Shelley, however, recently procured it on the Gold Coast; and specimens from the same locality are in Sharpe's collection. It differs from *T. minutus* only in the absence of a white eyebrow, and may be the male of that bird. Besides these distinct species and the resident Tschagra Shrike of the African continent, there can be little doubt that the same species which is found in Algeria also occurs in South-eastern Africa; for Sharpe's collection contains specimens which cannot be distinguished from Algerian examples.

This bird is one of the few forms which belong, zoologically speaking, to other portions of the globe, and yet occur within the limits of the present work. It has been included in former treatises on the birds of Europe on account of its supposed capture in Spain; but there is at present absolutely no evidence that it has occurred in that country, and Mr. Howard Saunders says that it is not found in any list of Spanish birds. Lord Lilford, however, believes that it sometimes visits the extreme south-west of Spain; and Major Irby has given us the following note on the subject:—"The late M. Favier, whose MS. is now in my possession, says that the Tschagra does cross over to Spain. All I can say is that, during my five years' residence I never saw one, though it is a conspicuous bird, and one which I know well from having seen and shot it in Morocco; however, on showing a skin to some bird-catchers at Tarifa, they professed to recognize it, and even called it '*Alcaudon carnicero*,' a name I never heard applied to any other Shrike. I have since heard of one having been procured near Cadiz; but until an actual specimen is examined, it cannot of course be reckoned as a Spanish bird, although I have little doubt that it does occasionally occur near Tarifa, as it is not rare on the opposite coast of Tangier, only nine miles distant." The statement of MM. Degland and Gerbe that this species has been killed in the western departments of France, especially in Brittany, is surely wide of the truth, as is undoubtedly the reputed occurrence of the Tschagra in Britain, as set forth by M. Dubois.

Whether the present species remains in Northern Africa all the year round, and migrates to Southern Africa, is a question which remains to be settled. Canon Tristram writes respecting the bird in Algeria:—"The Hooded Shrike is not a desert bird, but is only a summer visitant to the Tell, retiring, however, very late, as I have met with birds of the year at the end of October. It seems strictly confined to the forest districts." His collection contains specimens procured between September and May. In Sharpe's cabinet are two examples sent by Mr. T. Atmore from Eland's post, S.-E. Africa, and obtained near that place in May and June. It is therefore possible, though we scarcely imagine it to be the case, that the Hooded Shrike breeds in Northern

Africa, and spends some time of the year in the south-eastern portion of that continent. According to Canon Tristram's statement, however, it is only found in Algeria during the summer months, at precisely the same time that Mr. Atmore shows it to be in South Africa: and hence arises a question of considerable interest; for if we suppose that the original *Tschagra* was the present small resident species which is found over the entire continent, it must have penetrated to Algeria under the same circumstances and in the same manner as *Pycnonotus barbatus*, and similar causes acting on the birds in two entirely different localities must have produced the large species which now exists in Northern and South-eastern Africa respectively.

Loche states that "the *Tschagra* is common in Algeria, frequenting bushy localities, where it runs about with great rapidity in search of its food, which consists of caterpillars, worms, spiders, larvæ, and all sorts of insects. It seldom takes to the wing, and runs oftener than it flies from one bush to another. When pursued it hides, and is difficult to flush when it has once been made to rise. Its song, or rather whistle, is an oft-repeated, sweet, and prolonged note, and bears no resemblance to the note of a *Lanius*. Its nest is placed on a bush or low tree, is large and bulky, composed of roots and twigs, and lined with feathers. The eggs, five or six in number, are somewhat pyriform and stout, the ground-colour being dirty white, and covered with small brown-red and grey spots, often collected at the large end, and thus forming a ring. They measure 24 by 18 millimetres. Although wild, it soon becomes quiet in captivity, but cannot be put in the same cage with other birds, as it kills them. It is easily fed with meat cut into small pieces, worms, and chopped liver." Dr. L. Taczanowski informs us that he "found it everywhere in Algeria during the winter, frequenting the forests near the coast, but nowhere numerous. It differs from the other Shrikes in hiding itself in the thickets, where it utters loud cries. In the spring I first heard it sing on the 5th of April; and its song is far better than that of the Long-billed Desert-Lark." Mr. J. H. Gurney, jun., in his paper on the ornithology of Algeria, gives the accompanying note:—"Has a wavering, uncertain flight. Its powers of wing are probably very limited. The least breath of wind blows up its long tail; hence it generally keeps close to the ground. It perches in a feeble manner, as if its legs could not support it. The only one I shot was on the 6th of February as it flew from a small, but thickly matted, bush near the sea, far away from any trees. The previous fortnight there had been several in the poultry-market at Algiers."

The following interesting note is taken from Canon Tristram's essay in 'The Ibis,' on the birds of Algeria:—"Sitting across my pack-saddle, I had just missed a snap shot at a rabbit, when a strange scream from a matted lentisk bush arrested me—'*Tschâgra, Tschâgra, chugra, chrug*!' most inharmoniously repeated. I dismounted, approached, but could not see the hidden vocalist, though I struck the bush several times; at length a stone dislodged him, and I brought him down ere he had reached the next clump. It was a fine male specimen of *Telephonus cucullatus*, or Tschagra, aptly so named, and was the first I had ever seen. He is a beautiful bird in flight, his rich chestnut wings prettily contrasting with his long expanded fan-like tail of jet black with a broad white bar at its extremity. In his habits he differs much from other Shrikes, never showing himself, as they do, on the extremity of a branch, or in an exposed tree, but always concealed in the thickest recesses. 'Heard, not seen,' is his motto. I looked in vain for the nest, which was probably in the neighbourhood, as I saw another bird

gliding through an adjoining thicket. A few days afterwards, on my return, I observed a nest, the only one I ever took, placed in the centre of an arbutus bush, large and coarsely constructed of twigs, with a thick lining of wool and hair, and containing four eggs. These were slightly larger than those of *Lanius excubitor*, of a white ground, very thickly covered over the whole surface with brown spots, and a few russet-red blotches, somewhat intermediate in character between those of the Shrike and the Lark. But for the closeness of the spots and their reddish hue, they might easily pass for the eggs of *Certhilauda desertorum* in my collection."

In the neighbouring country of Tangier, Mr. C. F. Tyrwhitt Drake says, the present species was "not rare, but very shy. To be found chiefly in the cane-hedges." Major Irby has also kindly sent us a note on the bird as observed by him in the same country. "I have taken the nest, with three eggs slightly sat on, on the 25th of April. They frequent very thick brushwood, and keep as much as possible out of sight. When flying, the red of the wings shows very much; and they are an easy species to recognize after having once seen one alive. M. Favier says that three eggs is the usual number, that they nest twice a year, and that their note is a peculiar whistle, much resembling that of *Turdus merula*."

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a. Algeria (*Fairmaire*). *b*. Algiers Market (*J. H. Gurney*). *c*. Garbia, W. Morocco, April 26th, 1871 (*L. H. Irby*).

E Mus. R. B. Sharpe.

a. South Africa (*Verreaux*). *b, c*. Eland's post, S.-E. Africa, May 28th and June, 1870 (*T. Atmore*).

E Mus. H. B. Tristram.

a, ♂. Koleah, May 5th, 1856 (*H. B. T.*). *b*. Alger, September 1856 (*H. B. T.*).

Family AMPELIDÆ.

Genus AMPELIS.

Bombycilla apud Brisson, Orn. ii. p. 333 (1760).
Ampelis, Linnæus, Syst. Nat. i. p. 297 (1766).
Parus apud Pallas, Zoogr. Rosso-As. i. p. 548 (1811).
Bombyciphora apud Meyer, Vög. Liv- u. Esthl. p. 104 (1815).
Bombycivora apud Temminck, Man. d'Orn. p. 77 (1815).

Being allied on the one hand to the Shrikes and on the other to the Flycatchers, the genus *Ampelis* fits very well between these two families. The genus most nearly allied to it appears to be the American *Ptilogonys*. Its only representatives are *Ampelis garrulus*, which inhabits the northern portions of the Palæarctic and Nearctic Regions, *Ampelis cedrorum*, which is found in the Nearctic Region, and *Ampelis phœnicopterus*, which is confined to Japan. *Ampelis cedrorum* is said to have occurred in Great Britain, but, so far as I can gather, without any valid reason. I know of more than one instance where a specimen of *Ampelis garrulus* has been killed and sent to a local taxidermist to preserve, and he has sent back in place of the bird received a mounted specimen of *Ampelis cedrorum*, which has consequently done duty as a British-killed example. Errors of this nature have doubtless caused the latter species to be recorded as a straggler to Great Britain; but it may always be distinguished from our Waxwing by having the under tail-coverts dull yellowish instead of bay.

The Waxwings frequent conifer-woods, especially where the low pines and larch predominate; and during some seasons they migrate in large numbers and spread over the whole of the northern portions of Central Europe. They are unwary and tame in their general habits, perching on the top branches of trees and bushes, and may easily be shot down. They are, as a rule, silent, uttering only a low, not unmusical call-note. They feed on insects, fruit, and berries of various kinds, and are voracious feeders. Their cup-shaped nests are placed on a tree, and are constructed of twigs and moss, lined with fine lichen; and they deposit pale French-grey eggs spotted and blotched with purplish grey and brownish black, the number being, as a rule, five or six.

Ampelis garrulus, the type of the genus, has the bill strong, straight, short, broad at the base, compressed towards the tip, distinctly notched, gape without any bristles; crown with a conspicuous long tuft; nostrils basal, oval, partly concealed by short feathers; wings long, pointed, the first quill nearly abortive, the second and third nearly equal and longest, the short inner secondaries with the shafts prolonged to a narrow, oblong, sealingwax-like, horny appendage; tail moderately long, slightly rounded, the feathers sometimes with horny appendages like the inner secondaries; legs short, tarsus covered in front with four plates and three inferior scutellæ; toes moderate in size, claws moderate, arched, acute, laterally grooved; plumage soft and silky.



WAXWING

BOMBYCILLA GARRULA

AMPELIS GARRULUS.

(WAXWING.)

Ampelis garrulus, Linn. Syst. Nat. i. p. 297 (1766).
Bombycilla bohemica, Briss. Orn. ii. p. 333. no. 63 (1760).
Le Jaseur de Bohême, Buff. Ois. iii. p. 429 (1774).
Bombyciphora poliocœlia, Meyer, Vög. Liv. & Esth. p. 104 (1815).
Bombycivora garrula, Temm. Man. d'Orn. p. 77 (1815).
Bombycilla garrula, Vieill. N. Dict. xvi. p. 523 (1817).
Parus bombycilla, Pall. Zoog. R.-A. i. p. 548 (1831).
Bombycilla bohemica, C. L. Brehm, Vög. Deutschl. p. 219 (1831).
Bombycilla brachyrhynchos, C. L. Brehm, ut suprà (1831).

Jaseur de Bohême, French; *Seidenschwanz*, German; *Pestvogel*, Dutch; *Sidensvands*, *Skitteren*, Danish; *Sidensvans*, Swedish; *Sidensvands*, Norwegian; *Tilhi*, *Kuukainen*, Finnish; *Jemiotuszka*, Polish; *Siviristiel*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 261; Werner, Atlas, *Omnivores*, pl. 13; Kjærb. Orn. Dan. taf. xii.; Frisch, Vög. Deutschl. i. taf. 32; Fritsch, Vög. Eur. taf. xxvii. figs. 4, 5; Sundevall, Sv. Fogl. pl. xviii. fig. 4; Gould, B. of Eur. pl. 160; id. B. of G. B. vol. ii. pl. xxi.; Naumann, Vög. Deutschl. taf. 59; Schlegel, Vog. Nederl. pl. 121; Audubon, B. of Amer. pl. 246.

♂ *ad.* suprà rufescenti-cinereus, subtùs cinereus rufescente lavatus: pileo cristato, fronte saturatè rufo: circa basin rostri suprà lineâ et per oculos ad occiput fasciâ nigris: a maxillâ inferiore striâ albidâ inter fasciam dictam et gulam nigram: remigibus nigricantibus quatuor externis in pogonio externo versùs apicem albis et in pogonio interno eodem colore apicatis, sequentibus similibus sed in pogonio externo versùs apicem flavis, secundariis nigricanti-cinereis in pogonio externo versùs apicem albis, scapis membranulis ovato-elongatis coccineis terminatis: uropygio supracaudalibusque canis: caudâ ad basin cinereâ, versùs apicem nigrâ et conspicùe flavo apicatâ: mento et gulâ nigris: crisso et subcaudalibus saturatè rufis: rostro nigro, ad basin pallidiore: iride rufescenti-fuscâ: pedibus nigris.

♀ *ad.* vix a mari distinguenda.

Pullus suprà pallidè rufescenti-cinereus, subtùs grisescenti-cervinus indistinctè flavicante cervino striatus: pileo vix cristato, saturatè rufescenti-cinereo: lineâ nigrâ per oculos angustiore quam in adulto: mento et gulâ grisescenti-cervinis nec nigris: remigibus in pogonio interno nigricantibus nec albo apicatis, secundariis appendicibus angustioribus, et apice caudæ pallidiore et angustiore quam in adulto: abdomine imo saturatè flavicanti-albido: subcaudalibus pallidè rufis: rostro pallidè corneo: pedibus pallidè grisescenti-carneis.

Adult Male (Stockholm, 2nd March, 1872). Upper parts generally light greyish brown; the rump and

upper tail-coverts ash-grey or pale blue-grey; underparts pale brownish grey; forehead and sides of the crest reddish chestnut; from the base of the bill passing through and above the eye a broad jet-black streak, which on the nape is hidden by the long crest which covers the crown; quills blackish, the outer web towards the tip white on the outer primaries and yellow on the inner ones, the inner web broadly tipped with white; secondaries blackish grey, the outer web towards the tip pure white, all terminated by a narrow oblique expansion of the prolonged shaft resembling red sealing-wax; primary coverts broadly terminated with white, smaller coverts and scapulars similar to the back; tail grey at the base, black towards the tip, and terminated by a broad bar of pure yellow; several of the tail-feathers have the wax-like appendages, though but comparatively very slightly developed; throat glossy black, bordered at the base of the mandible by white, and on the sides below by pale rufous; under tail-coverts rich brownish or orange-red; bill blackish horn, lighter at the base; legs black; iris rich reddish brown. Total length 8 inches, culmen 0·65, wing 4·55, tail 2·8, tarsus 0·8.

Adult Female. Scarcely distinguishable from the male, except that the wax-like appendages to the secondaries are usually smaller and fewer, the black on the throat is not so clearly defined, and the yellow on the tail is narrower; none of these characters, however, appear invariably to hold good.

Nestling (Archangel, 9th August). Bears a general resemblance to the adult bird, but is much paler in colour, and has the underparts greyish buff, streaked with yellowish buff, the abdomen being dull yellowish buff; under tail-coverts pale orange-brown; head without any reddish brown shading as in the adult, and but slightly crested; the black mark through the eye very slight, and that on the throat wanting; the red tips are on five of the secondaries, but the inner webs of the secondaries are without any terminal band of white; beak dull light horn-colour; legs pale fleshy grey.

Obs. The young birds, which I obtained near Uleåborg, and which were figured by Mr. Gould in his 'Birds of Great Britain,' are younger than the specimens above described, and somewhat paler in colour, but otherwise agree closely with it.

The summer plumage differs but slightly from that worn in the winter; but the head is paler, the rufous colour on the forehead is not so dark, and the crest is lighter than the nape, whereas in winter it is usually darker; and the entire summer plumage has a faint wash of yellowish red, which makes it look rather duller than the full winter garb.

Obs. I cannot find any constant distinctive character by which the female can be distinguished. It has been supposed that she never has the terminal white band on the *inner* web of the secondaries; but I have found not a few old females having this very fully developed. The female appears, however, to obtain the full plumage much later than the male; and I have never found one with more than seven wax-like appendages to the secondaries, whereas some of the males have eight. One curious circumstance is that my nestling birds have these wax-like appendages more developed than they are in many full-grown though evidently still young birds, both males and females by dissection. My friend Mr. H. Seebohm, who has paid considerable attention to this question, takes a somewhat different view of it to what I do, and writes to me as follows:—

"The difference in plumage between the sexes has been an object of special interest to me for some years; and I have never lost an opportunity of examining any skins of these birds that came in my way, both in this country and on the Continent. From a comparison of the various specimens in breeding-plumage which have come under my notice, chiefly collected by Mr. Wheelwright at Quickjock, and those shot in this country, which are of course all in winter dress, I can detect no difference whatever between the summer and winter plumage of the Waxwing. The finest specimens which I have seen are in the hands of my friend Mr. Samuel Gardner, of Sheffield, selected by himself from thousands of these birds, exposed for sale as food

in the flower-market in St. Petersburg. In all collections of skins of the Waxwing I find two perfectly distinct types of plumage in about equal numbers :—one in which the white mark at the end of the primary quill-feathers is on the outside web only, and resembles the letter I; and the other, in which a similar white mark is continued at the end of the inner web, making the mark resemble the letter V. The I-mark I have invariably found associated with small wax-like appendages. The V-mark, on the other hand, is invariably associated with large wax-like appendages. The former I take to be the female plumage, and the latter the male. There are seven of the secondary quill-feathers which, in both sexes, have an I white mark on them, and are usually tipped with wax-like appendages. In what I take to be old birds, the eighth secondary quill-feather, which has no white mark, has also a wax-like appendage, but always very small; and sometimes the centre pair of tail-feathers, and sometimes all of them, have the shafts reddish towards the end, forming at the extreme end a sort of rudimentary wax tip. These peculiarities, which I take to be all indicative of age, or rather perhaps of full maturity, are indiscriminately found on male and female specimens. All the unfledged nestlings which I have seen had the I-markings on the primaries, and many young males, suggesting the natural conclusion that the adult plumage is not assumed by the males until they begin to pair, which I imagine to be the case with most birds where the plumage of the sexes is different. One of the skins in my collection has the mark somewhat intermediate. The white does just cross over into the extreme tip of the inner web; and the wax-like appendages are somewhat larger than is usual in the female. This bird I take to be a male which has not yet assumed the full adult plumage. I have seen a few (comparatively very few) skins labelled females with the V-markings. It is possible that some of these may be old or barren females which have assumed the male plumage; but I am more inclined to suspect that these skins are incorrectly sexed. I know by experience how easy it is to make an error in this respect, especially in winter."

The Waxwing inhabits the extreme northern portions of the Palæarctic and Nearctic continents during the summer season, migrating southward in the winter, often in extremely large flocks, and appearing at irregular intervals in the central parts of the above-mentioned regions. So seldom and irregular are its migrations to the central portion of our continent, that its appearance is supposed to forebode famine or pestilence; and hence its Dutch name *Pestvogel*, literally "bird of pestilence."

With us in Great Britain it is by no means so rare a visitant; and though not seen every year, still the number of occurrences on record from various portions of the British Isles tends to prove that its visits are not unfrequent, and that in certain years tolerably large flocks make their appearance. Professor Newton informs me that "the first recorded appearance in England is that by Lister, who, in a letter to Ray (Phil. Trans. 1685, no. 175. p. 1161, fig. 9), says that one or two were shot at York in January 1681. The figure of this bird, though rude, is sufficient to show that there is no mistake as to the species. Johnson, also writing from Brignall, in Yorkshire, in May 1686, describes two which had been killed in the preceding March; and Thoresby, in a letter to Ray, dated 'Leeds, April 27th, 1703,' mentions its occurrence, stating that he is tempted to think that it 'is become natural to us, there being no less than three killed nigh this town the last winter.'" In Scotland, according to Mr. Robert Gray (Birds of W. of Scotl. p. 107), it is "a frequent winter visitant to the eastern counties; but in the midland and western counties its appearance is extremely irregular and uncertain. It is recorded by the Rev. W. Patrick that a vast flock of Waxwings appeared in the haughs of Hamilton in the winter of 1782. Three specimens were shot there in 1830.

"I have not been able to trace the occurrence of this species on any of the Outer Hebrides;

but several specimens were seen and shot in the Isle of Skye in 1850. It has likewise been obtained in Argyleshire and Wigtownshire. A specimen, which I saw, was taken alive at Portpatrick in the winter of 1866. Early in December of that year Waxwings were observed in various parts of Britain in large flocks, greatly exceeding those of former years; and from one or two correspondents I learned that these migratory flocks had spread themselves over a large tract of country. In the north of England they were observed in the month of November; and I heard of as many as fifty-seven specimens having been killed in a single week in one county alone. On the eastern side of Scotland examples occurred sparingly in nearly all the counties; but in Aberdeenshire and Morayshire they were seen in flocks of forty or fifty birds. In the western counties, on the other hand, I could not learn of a single instance of the bird's capture; but in midland districts small parties were observed. One of these stray flocks, consisting of five birds, made its appearance near Lanark, in a garden where there were several rowan trees, on the berries of which the birds fed, until by their tameness they attracted the attention of a bird-stuffer, who managed to shoot them all after they had been some days in the neighbourhood. The arrival of these erratic birds in such numbers in the year referred to at once suggested a winter of unusual severity—a surmise which was afterwards abundantly verified, though at the time of their first appearance it was difficult to believe there could be such a thing in prospect, the weather then being remarkably mild." It has been met with in all our northern and eastern counties; and regarding its occurrence in Norfolk I may quote Mr. H. Stevenson, who states (B. of N. i. p. 154) that "Sir Thomas Browne does not appear to have noticed this species; and the earliest record therefore of its appearance in Norfolk and Suffolk is contained in the 'Catalogue' of Messrs. Sheppard and Whitear, who speak of it as an occasional visitant, which 'has not unfrequently made its appearance in the counties, and generally from November to March.' They also allude to its abundance at Herringfleet in 1810, and to a 'prodigious flock' observed at Bawdsey, in Suffolk, some years prior to the date of their publication (1825). In 1829, according to the Messrs. Paget, of Yarmouth, they were very plentiful in that neighbourhood, and several were obtained in the winters of 1847 and 1848, in the latter year more especially; but in the following winter of 1849–50 perhaps the largest number ever known in this country were observed along the entire eastern coast of England and many parts of Scotland. Upwards of thirty successive notices, from various parts, of specimens obtained appeared at that time in the 'Zoologist;' and though even these conveyed but a very small idea of the numbers that actually visited us, they amounted to five hundred and eighty-six birds *killed*. A very large proportion of these were procured in the month of January, when in Norfolk alone twenty-two specimens were obtained and sent into Norwich for preservation." In the southern and western counties it has been met with from time to time, as the records in the 'Zoologist' and 'Field,' the journals which so often contain the news of the untimely end of many rare visitors to our island, clearly show; but it appears to occur more rarely on the west coast. Speaking of its having been met with in Somersetshire, Mr. Cecil Smith writes to me that "it is a rare visitant; our vicar, the Rev. M. A. Mathew, recorded in the 'Zoologist' the appearance of one in his garden at Bishops Lydeard on the 7th of February, and of another on the 23rd of March this year." The last winter in which the Waxwing appeared in England in large numbers was that of 1866–67; and referring to its occurrence near Sheffield that season, Mr. H. Seebohm writes to me as follows:—

5

"The winter of 1866–67 will long be remembered by British ornithologists as one of the great Waxwing-seasons. The whole year 1866 (the year of the cattle-plague) was wet, the mild winter at each end being scarcely distinguishable from the cold summer between. On New Year's day frost and heavy snow set in. Early in November great numbers of the Bohemian Waxwing made their appearence. The largest flocks were seen in Norfolk. North of that county many birds were shot at Scarborough, Newcastle, Berwick, up to Aberdeen and Inverness, and southward as far as Dover and Rye. I was fortunate enough to meet with a small party of these interesting strangers as I was walking down the Glossop Road to business into Sheffield, on the morning of the 29th of December. My attention was arrested by three or four birds which flew across the road and alighted in a laburnum tree in Miss Ray's gardens. I imagined from their flight that they must be Starlings; but, fancying they showed white marks on the wing, I had the curiosity to cross over the road to get a nearer view of them. The tree on which they had alighted was only a few yards from the road, and I watched them over the wall for some time. I recognized them at once by their crests. The yellow markings on the wings and tail were very conspicuous, and I fancied I could distinguish the red wax-like appendages. They were very active, putting themselves in all sorts of positions, and did not seem at all disturbed by my scrutiny; and when at last they flew away, and I turned round to continue my walk, I found that quite a small crowd had collected behind me, one of whom (probably a Sheffield grinder, and consequently well up in Pigeons and Dogs) volunteered the information that they were French Starlings. I sent a short notice of the appearance of these illustrious visitors in our town to one of the local papers; and the following day more than one gentleman assured me that their children were confident that they had seen birds agreeing with my description in Broomhall Park within the last day or two; and on the 31st two specimens were shot there by the gardener of Mr. Willis Dixon; so that it is probable that the flock continued in the neighbourhood for some days." As previously stated, the Waxwing occurs with us during the winter; but Mr. Stevenson refers to one, recorded by Mr. Gurney, as having been killed near Norwich on the 20th of April, and he saw a specimen which was killed near North Walsham as late as the first week of May 1853. In Ireland it is recorded by Thompson as an occasional, but rare, winter visitant; and he refers to two instances of its occurrence in the county of Belfast, and one in the county Cork. It has occurred in the Færoe Islands. Captain Feilden tells me that Waxwings were seen on the 3rd of November, 1852, in the Governor's garden at Thorshavn; and Mr. H. C. Müller informed him that a pair were observed in the same place on the 29th of October, 1866.

In Scandinavia the Waxwing is common, being found in the summer season in the forests of Lapland, and during the winter spread all over the central and southern portions of the country. As below stated, my friend Mr. R. Collett has found it breeding in the north of Norway, and believes that it likewise occasionally breeds in the woods of Southern Norway. He informs me that "in the neighbourhood of Christiania they sometimes stay as late as April (in 1860 the last were seen on the 4th, in 1867 on the 21st, in 1869 on the 8th of that month). They were uncommonly numerous in the winters of 1866–67 and 1871–72, particularly in the month of January 1872, when they appeared in immense flocks, consisting of thousands of individuals, and were brought in cart-loads to the game-market of Christiania. The plentiful supply of rowan-berries sufficiently accounted for their numbers."

In Sweden it is numerous during the winter season; and I shot many near Gefle and in other parts of Eastern Sweden during the winter I spent there, and when travelling along the Swedish coast by sledge in the winter season. It is said to breed in Quickjock, Lapland; and Mr. Wheelwright obtained a nest, with two eggs, taken about an English mile from Quickjock. Dr. Sundström informs me that it sometimes occurs in the southern parts of Sweden till quite late in the spring; he himself saw flocks in Nerike on the 23rd of April, 1859; and a female was killed on the 6th of May, 1848, near Nyköping, in Södermanland.

In Finland it is common in the winter season throughout the country, and breeds as far south as Uleåborg, where I took the nest as stated below. When travelling up the coast from St. Petersburg in the spring I repeatedly met with flocks, and saw small parties as late as May, some of those I then shot having the testes as large as swan-shot. Near St. Petersburg they are common during the winter season; and I have seen thousands brought to the Gostinnoi Dvor, and exposed for sale in large, square, shallow baskets. In the Archangel Government they are common near the town of Archangel in the spring and autumn, but do not remain there during the winter. That they breed in the neighbourhood of that town is certain, as I have received from my collector there young birds which could only have left the nest a few days; and Mr. Meves observed a female feeding her young near the town of Onega in the month of July. Mr. Sabanäeff writes to me that "Professor Kessler met with it in the late summer in the Government of Olonetz; and from my own personal observation I believe it breeds in the district of Sarapulsk, in the Government of Viatka. It is not uncommon in the south-eastern part of the Permsk Ural, and certainly breeds in the Pavlinsk Dacha. On the 26th of May I saw one in a forest on the boundary of the Perm and Viatka Governments, near the village of Saigatke, which appeared to be enticing a dog away from its nest."

It is not uncommon in the Baltic Provinces during the cold season; and Mr. Taczanowski writes that "it arrives in Poland during the winter, when it finds abundance of food in berries, and late in the season will feed on the buds of fruit-trees. They sometimes remain as late as the middle of May, and then leave after having paired." In North Germany it is, Borggreve writes (Vogelf. Nordd. p. 80), "more common in the eastern than in the western portions of the country. On the Mosel it is rare; Schäfer obtained only three. Gloger states that a pair bred in the Carlsruhe park, near Appeln; and Blasius likewise records its having bred on one occasion in the Stuttgart park."

In Denmark it is common during the winter season, leaving again early in the spring, but it is not seen in equal numbers every season. In Holland and Belgium it is likewise found during the cold season. De Selys states that a couple of years rarely pass without the appearance of some of these birds near Liége in the winter months; and according to De la Fontaine they visit Luxembourg at intervals in severe weather. It only occurs in Holland during the winter; and although my artist, Mr. Keulemans, assures me that it has once been known to breed there, I cannot believe that such is the case. In France it occurs at long intervals and during very severe winters; Godron records it from near Nancy. It has also occurred in Southern France; but Jaubert and Barthélemy-Lapommeraye write that since the great visitations of 1829 and 1834 this species has not been met with in Provence. I do not find it recorded from Spain or Portugal; but Count Salvadori states that in Upper Italy it occurs nearly every year, sometimes

in great numbers. Savi records it from Piedmont and Liguria, Monti from Brianza in 1829, and Costa notices the capture of a single specimen in the Neapolitan district. Prof. Doderlein records only one specimen from the district of Modena, and adds that up to the present time he has not obtained it in Sicily. The Ritter von Tschusi Schmidhofen informs me that "it occasionally appears in large flocks in Southern Germany during the winter. Palliardi says that they have been seen very late in the season in Bohemia, and Schab shot specimens at Mistek, in Moravia, in May." Mr. G. C. Taylor (Ibis, 1872, p. 230) records it from Turkey, where, he says, he never saw it in the flesh, but obtained one collected near Pera by Mr. Churchill, a gentleman who had formed a collection of birds procured in that vicinity. It is recorded from Southern Russia by Dr. G. Radde, who states (J. f. O. 1854, p. 56) that it visits the Crimea even during mild winters when the cold is not greater than 5°, and he observed flocks of from ten to fifteen individuals, chiefly in immature plumage, in the mountains. With regard to the earlier recorded occurrences on the Continent I am again indebted to Professor Newton for the following information:—"Aldrovandus records a vast irruption of these birds into Italy in the year the Emperor Charles V. was crowned at Bologna (1530). According to Gesner there was so great a number of them on the Rhine between Mainz and Bingen in 1552 that when flying they cast a shade like that of nightfall. In 1571 they again appeared, says the former authority, in Italy about Modena and Placentia, with much foresight avoiding the neighbourhood of Ferrara, where an earthquake and flood soon after happened; and earlier in the same year they no less astonished the Belgians by an invasion in force."

To the eastward the Waxwing occurs throughout Siberia to China, inhabiting the extreme north in the summer, migrating southward in the winter. Middendorff writes that it arrived at Udskoj-Ostrog at the end of October and remained there until March. In October and at the end of the year he saw it on the southern slope of the boundary mountains in Mantchuria, but only in small flocks. Dr. Radde observed them in the lower Angara valley on the 8th October, and on the 14th, when at the village of Urikowskaja, fifty versts below Irkutsk, he observed large flocks on migration coming from the north-east and flying very high. They remain late in Southern Siberia; and he noticed them at Irkutsk at the end of April. In the Bureja mountains he shot old males on the 29th of March, and young ones on the 13th of April. Dr. Dybowski records it as common on the Onon in the winter, and writes (J. f. O. 1872, p. 442) that "it arrives in Dauria in flocks in the winter, and is then common, but does not appear in equal numbers every year. They usually arrive late in October. In 1871 we saw several pairs in the conifer-woods in the subalpine mountains on the road to Chamardaban, but could not discover their nests, as the snow was then too deep in the woods." Dr. Dybowski does not give the exact date when he saw these birds; but, judging from the fact that the snow was in the woods, I think they could not have been breeding thus early in the season. It has been met with in Northern China by Mr. R. Swinhoe, who writes (P. Z. S. 1863, p. 298) that it is occasionally seen there during winter.

In America this species is common in the extreme north, being a much more boreal bird than its close ally the Cedar-bird (*Bombycilla cedrorum*). Professor Baird, in his 'Review of American Birds,' p. 406, gives its range in America as "not hitherto found in the western province. In winter extending along the Rocky Mountains and the plains as far south as Fort

Massachusetts and Fort Riley; a regular visitor to the shores of Lake Michigan and Lake Erie. East of this rarely seen along the United-States border." Mr. Dall (Trans. Chic. A. S. i. p. 280) writes that it is "quite common near Nulato, but does not arrive till June 10th, or later. I obtained a number of skins from the Indians, taken during my absence up the river. It breeds, and the eggs have been obtained, at Fort Yukon." Professor Baird, referring to its breeding in America, writes (*l. c.*) that "the only instances on record are a nest and one egg, obtained by Mr. Kennicott on the Yukon in 1861, and a nest and single egg on the Anderson river by Mr. M'Farlane.

In its habits the Waxwing is confiding and tame, though much less so in the spring and summer than in the winter. At the latter season of the year I used to see large flocks in Southern Finland, usually frequenting the mountain-ash trees, and very often seen in the gardens quite in the centre of the towns. So tame are they, that when fired at, and one or two killed, the remainder will only fly off to a short distance and soon return to the same tree again. The flocks are often very large; and I have known of more than twenty specimens having been killed at one shot; I once killed as many as fourteen at a shot off a large mountain-ash tree, on which a flock was perched picking off the berries. It is a peculiarly silent bird; and I have watched a flock for some time without hearing any of them utter a sound. The only note I have heard is a low plaintive whistle, from which, I imagine, it is called by the Finns by the name of *Tilhi*, as this gives some idea of the sound of its call-note. When frightened or suddenly disturbed, the same note is uttered, but is then shriller and louder in tone. It sits very erect, and carries its crest so that it is distinctly seen; when frightened it at once raises its crest, slightly spreading it. A flock busy feeding on a rowan tree, especially if the ground and the tree are covered with snow, is a most pleasing sight; and I have often sat and watched them from a window close to which was a small mountain-ash, to which they often came to feed on the berries, which latter hung in large clusters, like bunches of coral beads, forming a rich contrast to the pure white snow. In confinement it thrives well, but is stupid and dull, soon accustoming itself to cage-life, even when caught old, eating freely, but seldom uttering even their simple note; and from their dirty habits they soon lose their beauty. I have often seen them in cages; but there they formed but a sorry contrast to their more fortunate friends who still enjoyed their freedom. Mr. H. Seebohm writes to me that some years ago "a German bird-fancier brought a number of singing-birds to Sheffield for sale by auction. Amongst these were advertised, as great curiosities, a pair of Russian Nightingales. These birds turned out to be a pair of Waxwings, which I bought, and kept in a cage for some months. They were most voracious eaters; and the cage required cleaning several times a day. They were very active and restless, especially after the gas was lighted in the evening, and even when perched at rest seemed to be continually moving their heads about as Razorbills are in the habit of doing. If alarmed, they would stretch out their necks to almost double the usual length. They were remarkably silent birds. The only note I heard was a sort of *cir-ir-ir-ir-re*, very similar to a well-known note of the Blue Tit. Occasionally this succession of notes was repeated so rapidly as to form a trilla, like the song of the Lesser Redpole."

Few birds' eggs have been more eagerly sought after than those of the Waxwing; and certainly the nesting-habits of no species have been so long enveloped in doubt and uncertainty.

We are told by Professor A. Newton that Baron von König-Warthausen went to the trouble of caging an entire flock, in hopes of thus getting some eggs, but without success. The Swedish naturalists were the first to point out the localities where the nest was subsequently found; but none of them succeeded in throwing any definite light on the question of its mode of nidification. Nilsson, writing shortly before the discovery of the breeding of this species, says that "it is now quite certain that it breeds in the dense conifer-woods of Lapland. Mr. W. von Wright, when travelling in 1832 in Lapland, found the Waxwing very numerous during the breeding-season, in about 67° 20′ N. lat.; and at Ketkesuando, in 68° 11′, they were still more numerous: specimens shot at Palajoki, in 68° 20′, at midsummer, showed that the breeding-season was then at hand. Mr. von Seth, who travelled in Lapland in 1842, informed me that the Waxwing was observed near Gellivara, in the swampy wooded districts, and that he believed it to be commoner in the east, and to come from Finland. Pastor Björkman stated that once when he was lying quite quietly on an island a Waxwing came and crept into a hollow fallen tree, in which he found three greyish, finely spotted eggs, which, he states, resembled those of the Fieldfare. The Friherre C. G. Lövenhjelm, who travelled in Norrland and Luleå Lapland in 1843, was informed that it was found at Jockmock and Gellivara; and he was also told by Pastor Björkman that he had on two occasions found the nest in the hole of a tree, that the nest was constructed of straws, feathers, and reindeer-hair, that in the one (as above stated) he found three eggs, which were bluish white, marked with black spots and lines, and in the other six or seven small young birds."

The first naturalist who succeeded in obtaining authentic eggs of this species was the well-known oologist the late Mr. J. Wolley, who of all men, considering his unwearied energy and perseverance, was the most worthy to have succeeded where so many of the Scandinavian naturalists failed. Following the track pointed out by those gentlemen, and relying on their trustworthiness in matters of detail, Mr. Wolley persevered, trusting to the remote chance of one day discovering the long-sought-for eggs of this bird, until, in 1856, his Lapp collectors succeeded in finding an undoubted nest of the Waxwing. I cannot do better than transcribe the excellent account of this discovery published by Professor A. Newton in 'The Ibis' (1861, p. 94), as follows:—

"The first intimation I received from Mr. Wolley that the discovery was accomplished was contained in a letter written by him on his way up the Baltic, and dated 2nd September, 1856. He says, 'Let me tell you now, whilst I think of it, that I have some reason for believing that the Waxwing makes its nest in good-sized fir-trees in the month of June. I give you this hint in case I should not live to give you more certain information; but you remember that I am not to return home without a Waxwing's nest in my hand.' He had, in fact, a few days before, when at Stockholm, received from his faithful Ludwig a letter telling him of the discovery, in which Ludwig had himself assisted, and respecting the truth of which he said, his 'Master must be quite sure—without doubt.' Mr. Wolley, however, forbore to allow his own or my expectations to be raised too highly; and in spite of his receiving confirmatory evidence on his arrival at Haparanda and on his way up the river, it was not until he had reached Muoniovara, and had satisfied himself by repeated investigation of the whole story, that he trusted himself to write to me positively. His letter, dated 'Muniovara, 14 Sept. 1856,' after describing his own doings

and those of the friends I had made the preceding year, telling me of the expected scarcity of food, and giving the general results of the nesting-season, goes on to say:—

"'I have still to tell you of Ludwig's expedition with Piko Heiki to Sardio, on the Kittila river. It was early in June, and he had to wade over Pallas-tunturi up to his middle in snow. Arrived at Sardio, he found the lads there all at home, deep in dirt and laziness. He soon extracted from them the information that a pair of birds had been seen about, which they took to be *Tuka rastas*; and Ludwig himself had seen such a bird; and this bird's egg was entered in my list. . . . . Ludwig immediately started off into the forest, and sure enough he saw a bird which he thought was *Sidensvans*; but he was not quite sure, for the end of its tail looked white in the sun instead of yellow as in your picture*: but the next day, or in the evening, it was cloudy, and Ludwig saw the yellow; and now he had no longer any doubt. He said he would give all the lads day-money, and they must all search, even if it were for a week, till they found the nest. They sought all that night and the next day till about midday, [when] a lad called out that he had found the nest; and there it was, with two eggs, about nine feet high, on the branch of a Spruce. . . . . After five days Ludwig snared the old bird—a beautiful cock; and you may fancy with what pleasure I took it in my hand, and saw that there were no doubts remaining. Indeed I had before been pretty confident about it: Ludwig had written that I might be quite satisfied that it was the right bird. Martin Pekka had the picture with him at Sodankyla; and as soon as he came back Ludwig compared the bird with it, and made certainty doubly sure. The other picture went to Gellivara. . . . . I do not expect Waxwings in that quarter. You can fancy how eagerly I waited for Ludwig to produce the eggs. With a trembling hand he brought them out—but first the nest, beautifully preserved; it is made principally of black "tree-hair" (lichen), with dried spruce-twigs outside, partially lined with a little sheep's-grass and one or two feathers—a large deep nest. The eggs—beautiful!—magnificent!!—just the character of the American bird. An indescribable glow of colour about them! Ludwig had made for them such a box, that even if a horse trod upon it it would not break. He tells me he happened to say that they were most like "*Sawi-rastas*" (Common Thrush), and any one wishing to cheat should try that. The report seems to have spread, without the name of its originator being given; for in a week or two after, the notorious Sallanki Johan brought a *Korwa-rastas* (Waxwing), "shot from the nest," with its eggs,—the eggs being, as Ludwig at once saw, Common Thrush's. The next incident was the arrival of Johan's brother, the still more notorious Niku, but this time with a couple of young birds scarcely able to fly, which he had caught, as he said, out of a brood of five, by Pallas-tunturi. One of these Ludwig has stuffed, and a rare little beauty it is; the other was much knocked about, and Ludwig made nothing of it. Then a little girl, just ten days ago, brought three eggs from the other side of Nälima (about twenty-five miles from here), which she said were taken on a certain day in July, and were "*Kukhainen.*" They were undoubted Waxwing, but are very badly blown by her, as they were just hatching. At midsummer, Sardio Michel brought in a small batch of *Sidensvans*, with the birds (four in number) to each nest. So now I have a series, though but a very short one, of this *rara avis in terris*, this forerunner of famine—and of infinite value when one thinks of the uncertainty of

"* This picture was one of several coloured sketches of different birds sent to Mr. Wolley by Mr. Hewitson and myself, to assist him in making known his wants to the natives."

getting it again. At the same time I should tell you the Sardio lads found a nest which they believed to have been a last year's *Korwa-rastas*. On this river no one has seen the bird of late years, and very few know it at all. One old fellow, Nalio Aaron, says he saw one north of Nälima in 1853, and another in 1854. Martin Pekka showed the picture to many people in the Sodankyla and Kittila districts, but he could not make out that the bird was at all known; and in all his journey, when he kept a good look-out, he did not see one; so that even this year it seems to have come very sparingly and locally, just in the district north, east, and south of Pallas-tunturi. In 1853 I told you of a boy, Sieppi's Johan, who described a nest of birds he had found some years ago, which, from my interpreter's version, I thought might be that of the Waxwing. This boy, on being shown a skin, said he had never before seen the bird.

"'It is a relief to think that I am not bound to go to Russia next spring unless I like it, as I before felt that I was. I almost think I may leave the unbounded riches of the Nova Zembla coasts and of the north of Siberia—their Steller's Duck, Curlew Sandpiper, Little Stint, Knot, Sanderling, Grey Plover, Grey Phalarope—to younger adventurers.

* * * * * * * * * * *

"'Almost every day (and it is now the sixth since that of my arrival here) Ludwig has told me the whole story of the *Sidensvans*' nest, and I am never tired of hearing it:—how the season was very backward; how, in their expedition, he and Piko Heiki were getting very much out of spirits at the little success they met with; how he saw this bird in the sunshine; how, when at last the nest was found, he could scarcely believe his eyes; how he went to it again and again, each time convinced when at the spot, but believing it all a dream as soon as he was at a distance; the rising and falling of the crest of the bird, its curious song or voice: all he is eager to tell over and over again; and I have the fullest version, with all the "I said," "Heiki said," "Michel said," "Ole said," &c. These Sardio lads, as you have heard me say formerly, have a good knowledge of the small birds of their neighbourhood; but they are none of them sure whether they have ever seen *Sidensvans* before. As I have also told you, it seemed to be known to a very few wood's-men on that side of the country under the name of "*Korwa-rastas*" or "*Korwa-lintu*" (Ear-bird). It had occasionally attracted their attention, as having feathers on its head standing up like squirrel's ears. It was not till the second year of my stay here that I ascertained this with certainty. The first summer I believed it to be "*Harrhi*," a bird coming in bad seasons, and properly the Common Jay; but it seems that this name is also really sometimes given to *Sidensvans*; and therefore, as well as for other reasons, I am inclined to believe that the bird is only here very occasionally. . . . .

"'. . . . The young Waxwing I should wish our old friend Yarrell to describe; for I think it would give him pleasure. He might exhibit a nest and eggs at the same time with a pair of the birds in breeding-plumage to the Zoological Society; but, for special reasons, I should wish the Waxwing not to be talked about till the spring.'

"Mr. Yarrell's death having prevented Mr. Wolley's wish from being carried out, the announcement of the discovery was communicated to the Zoological Society, in the short though very comprehensive paper I have before alluded to, at their meeting on the 24th March, 1857, the specimens being exhibited by my brother Edward. They consisted of two nests—one of

which (the original of the figure in the 'Illustrated Proceedings'*) was afterwards deposited, with an egg, in the British Museum, while the other was presented (also with an egg) to the museum at Norwich, the authorities of which had for some time past taken a warm interest in Mr. Wolley's researches,—a pair of birds in their breeding-plumage, the nestling before mentioned (all three of which are now at Norwich), and some seven or eight examples of the egg. Of these latter, the two figured in the plate in the 'Proceedings' were subsequently sold at Mr. Stevens's rooms, and purchased by Sir William Milner, in whose collection they still remain. A third, sold at the same time, became the property of Mr. Henry Walter; and specimens were given to Mr. Wilmot, Mr. W. H. Simpson, and myself.

"In all, Mr. Wolley obtained twenty-nine eggs of the Waxwing in 1856. Later on in the autumn, an intelligent Lapp informed him that he remembered having seen a bird some twenty years before, and once or twice since had seen or heard another, but that was perhaps ten years previously. On the other hand, in 1856 he had seen them some half dozen times, and found a nest, from which, however, the young ones flew. This nest he subsequently brought very carefully, with the branch on which it was built, to Mr. Wolley, by whom it was sent the following year, by the hands of Dr. Edwin Nylander, to the museum of the University of Helsingfors. The Lapp added that in the spring he had observed of the birds that 'they flew up in the air, and came and sat in the same spot whence they had flown—he thought, in play; but perhaps they were catching insects,' as Mr. Wolley himself suggested.

"In 1857, it seems that the Waxwing was still more rarely distributed in Lapland than it had been the preceding year. Mr. Wolley was of course exceedingly desirous of taking a nest with his own hands, and for this purpose devoted to the search much of his time before crossing the district hitherto unexplored by him between the Muonio valley and the head-waters of the Tana. In this object he was only partially successful. He writes, 'For myself, I could not, in spite of every exertion, get a living Waxwing within range of my pair of eyes. I took a nest which had been deserted a day or two before, and from which something had thrown the eggs, one after another, upon the ground as fast as they were laid; of course, broken to bits. It was close to the house at Sardio. In vain I wandered through the woods, and scarcely shut my eyes at night. Many people were on the look-out; but, after the nest of three eggs I told you of from Jerisjärvi, the only arrival has been a perfect nest of five eggs found by Piko Heiki, whom I desired to give up every thing else, and work all the mountain-district for Waxwing.' The nest thus taken by Mr. Wolley, and which I intend to retain in my possession, as being the only one taken by him, bears date '16th June, 1857.' It was built in a Spruce, and agrees in most respects with those previously seen and described by him. The eight eggs just mentioned were the only ones obtained by him that year; for, though another nest with five eggs was taken for him by one of his most trusty collectors on an island, Ajos-saari, in the Gulf of Bothnia, near Kemi-suu (the mouth of the Kemi river), the finder was induced to part with it to a Russian traveller for three silver rubles, 'the doctor having represented that Mr. Wolley had already as many as he wanted,' a statement certainly not in accordance with the facts; for Mr. Wolley had, in giving him a nest, promised that, if he had them to spare the next year, he would transmit specimens of the eggs to the museum at Helsingfors. This same person, whose zeal might have

"* Illustr. Proc. Zool. Soc. 1857, *Aves*, pl. cxxii."

been commendable had it been qualified by either gratitude or good faith, previously informed Mr. Wolley that a naturalist in the Finnish capital had for some time offered a reward of fifty rubles (about £9) for a nest of the Waxwing, and suggested that the Sardio lads were entitled to the prize; whereupon Mr. Wolley immediately divided that sum (in addition to the some hundred dollars they had already received) among all who were engaged in the glorious affair of the 7th of June, 1856, and at the same time wrote to the University of Helsingfors to say that he could not allow its authorities to pay for his discovery. A brief notice of the booty acquired by Dr. E. Nylander will be found in the Appendix to the last edition of Professor Nilsson's excellent work*, communicated to him by Professor Alexander von Nordmann, who also furnished a more detailed account to the 'Journal für Ornithologie' for the following year, illustrated with figures from the specimens thus obtained†.

"The summer of 1858, when Mr. Wolley was with me in Iceland, was 'a great year for Waxwings.' Not far from a hundred and fifty nests were found by persons in his employment in Lapland, and some of them close to Muoniovara. It seems, as nearly as I have been able to ascertain, that no less than six hundred and sixty-six eggs were collected; and more than twenty more were obtained by Herr Keitel of Berlin, who happened, without, I believe, any expectation of the luck that was in store for him, to be that year on the Muonio river."

In 1858 I was in Finland, and, as usual, spent as much time as I could spare in the study of natural history, and was fortunate in being able then to take the nest of the Waxwing with my own hands. On my return to England I gave my notes to Professor Newton, who told me that he purposed to publish an account of the nidification of this species; and they were included in his paper above quoted as follows:—

"This same year (1858) saw an Englishman, however, accomplish what Mr. Wolley only partially succeeded in doing. The interesting account of an independent discovery of the breeding of the Waxwing, with which the kindness of Mr. H. E. Dresser has furnished me, will, I am sure, be read with pleasure; and I leave that gentleman to narrate his exploit in his own language:—

"'In 1858 I was a short time in Uleåborg, while on my way from Stockholm *viâ* Torneå to St. Petersburg; and having a little time on my hands, I spent it in company with Mr. John Granberg, of Uleåborg, collecting in the neighbourhood of the town. We intended to pass a day or two amongst the small islands near the harbour, and determined to visit one called Sandon, about four Swedish (twenty-seven English) miles from Uleåborg.

"'We (that is, Granberg, a student by name Heikel, and myself) left the town on the evening of the 3rd of July, in a little boat, and sailed to Warjakka, an island outside the harbour, where we provisioned for our trip. We then started for Sandön, but, there being but little wind, did not arrive off the island until about two o'clock in the morning. We grounded at some distance outside; and all three stripped for a swim, to find some deeper water; but not being able to get the boat much nearer, we made her fast and carried our traps on shore, getting almost devoured by mosquitoes in so doing. We had heard that there was a rough log-hut somewhere on the island, built by the Karlö peasants, who come annually to take away the

"* Skand. Faun. Foglarna, ed. 3, i. p. 571."

"† Journal für Ornithologie, 1858, p. 307; 1859, pl. 1."

marsh-grass, and accordingly set off in search of it. We were crossing a small open place when we started a bird, which Granberg, who was on first, said was a Waxwing (*Ampelis garrulus*); and having my gun loaded with dust-shot, I followed it up and succeeded in shooting it. It proved to be an adult female, and had evidently been incubating. We searched all the bushes and trees near, in hopes of finding a nest, but without any success; and as the mosquitoes were very troublesome, we determined to find the hut, take a nap, and continue the search afterwards. We soon did find it, and, after smoking out the mosquitoes and stopping up the smoke-hole, turned in on some marsh-grass, and did not awake until pretty late in the day. After breakfast we separated to explore the island; and Heikel and myself, meeting soon after on the opposite side, went on in company, but had no success, only finding a few small birds. . . . .

"'We had quite given up all hopes of finding the Waxwing's nest, when, as I was crossing a little barren to join Heikel, I saw, in a small pine tree close to where he was standing, a nest with several young ones in it sitting bolt upright, just as Grebes sit. Going nearer, I instantly knew them to be Waxwings. We threw off our game-bags; and while he stood below, I climbed up to the nest, which was in the fork between the main stem and the first branch, and not above nine or ten feet from the ground. The moment I touched it, the young ones (five in number) flew out. I jumped down, made a cut at the largest with my cap, and secured him; but Heikel did not get one. Directly the young one which I had caught began to cry out, several Waxwings flew from the neighbouring thicket—all, however, keeping out of gunshot except two, which came close round me, and both of which I shot. I then sat down and imitated, as well as I could, the call of the old birds. I was soon rewarded for my trouble by a young one coming out of a blueberry bush close by and calling lustily. Heikel and I gave chase, and secured him. Granberg, who had heard my two shots, then coming up, we commenced a diligent search for the other three young ones, but had to give it up as hopeless, owing to the thickness of the underscrub. I then climbed up again and took the nest away carefully, so as to preserve the shape, and to my great delight found one egg in it. We hunted for several hours in the higher part of the island for another nest; but, although we saw about nine old birds, we did not succeed in finding another nest. We did not shoot any more, hoping to find nests there at some future period.

"'We returned to Uleåborg the same evening, when I skinned my birds. We ought to have made an equal division of the spoil; but neither Granberg nor Heikel would hear of any division; consequently I have still two old birds and two young ones, besides the nest and egg, in my possession. I regret to say I did not look to see what the young birds had been fed upon; but when I took the nest, I found one or two of last year's dried cranberries in it.

"'I arranged with Granberg for him to go to Sandön in 1859 (for we had kept it secret in the town as to where we had found the nest) to see if he could find another nest; but he wrote to me that, the autumn after we had been there, the chief portion of the forest in Sandön had been consumed by fire, and that it was therefore useless to go there.'"

Since the discovery of its breeding-haunts in Lapland by Mr. Wolley, and in Finland by myself, the Waxwing has been ascertained to breed in Norway. Mr. R. Collett, in a useful little work on the ornithology of Norway, just published by him, writes as follows:—"The first reliable observation proving the occurrence of this bird as a breeding species on Norwegian soil was made

(not, as might have been supposed, in the tracts bordering on Russian and Swedish Lapland) in the wooded regions south of the Dovre. On the 5th of August, 1860, my friend Mr. Barth shot a young bird just fledged, which, with the rest of the brood, was frequenting the uppermost conifer-woods in Vaage, Gudbrandsdalen (61° 50′). The eggs from which the brood were hatched must have been laid in the beginning of July. So far back as 1853 it was repeatedly observed in the course of the summer in the subalpine conifer-woods of Valders; and an individual having been snared in Land (61°) at the latter end of May 1862, there is good reason to suppose that this species, at least in certain years, breeds sporadically in the woods of *Southern* Norway.

"In the summer of 1868 Nordwi procured its eggs, for the first time, from South Varanger, near the Anarjoki, a tributary of the Tana. In the outlying districts of Finmark it rarely occurs, a few individuals only having been observed.

"At Bosekop, in Alten, I found this species abundant in July 1872. I observed the first pair on the 14th of that month in a wet clump of non-evergreen trees (*Salices*). The female being killed, the male would not quit the spot, but flew about wildly, uttering his ordinary cry, and at intervals a peculiar note, expressive of dread, never heard in winter. Both of these individuals, as also a third shot the same day (male), were found on examination to be in the middle of the breeding-stage. In the two males the testes were of the size of peas, the eggs in the females being still larger. Unfortunately I had not time to look for a nest, having to leave shortly by a steamer. Alten (70°) is doubtless the most northern locality at which this species has hitherto been found breeding. A few days later Mr. Berlin, a young German tourist, discovered two nests at the mouth of the Utsjoki, a Russian tributary of the Tana, but whether on Russian or Norwegian soil is unknown. The nests were both found in birches, from 4 to 10 feet from the ground, and contained respectively two and five fresh eggs each. As to time, this corresponds pretty nearly with the development of eggs in females shot in Alten; for this species, therefore, the breeding-season was either unusually late that summer (*vide* Wolley's dates), or the period of nidification is very variable."

The typical eggs of the Waxwing are pale blue, marked with purplish underlying shell-markings and black overlying surface spots. Those in my collection, obtained by myself in Finland and by Mr. Wolley in Lapland, are all thus marked; but varieties are not uncommon, and these are fully illustrated by Professor Newton (Ibis, 1861, pl. 4), who there figures the ordinary eggs, such as I describe above, as well as a peculiar variety having the ground-colour dull olive, and another with a very warm-coloured ground-tint, besides one with linear markings. I cannot do better than refer my readers to the above-quoted plate as being the best representation of the eggs of this species that has been published up to the present time. The eggs of the Waxwing in my collection vary in size from $\frac{38}{40}$ by $\frac{27}{40}$ to $\frac{39}{40}$ by $\frac{28}{40}$ inch.

The food of the Waxwing consists during the summer season of various species of insects and berries, especially those of the juniper, and during the winter of berries only; at that season of the year they feed largely on the berries of the rowan or mountain-ash. The stomachs of a pair shot by Mr. Meves in the late summer near Undersaker, in Sweden, contained chiefly insects—there being in that of the male three *Hirtea marci*, thirty-eight Mayflies, three *Phryganeæ*, and eight berries of *Empetrum nigrum*, and in that of the female forty-six *Hirtea marci* and five Mayflies. The young birds appear to be fed chiefly, if not entirely, on berries of various kinds.

Meves writes that the young birds he obtained near Onega had been fed on the blue berries of *Lonicera sibirica*. Mr. Collett (*tom. cit.* p. 33) writes that the stomachs of individuals obtained by him in the summer (July 1872) were filled almost exclusively with the entire or dismembered bodies of *Tipulidæ*, of species of *Ctenophora*. One of the males, shot in a juniper bush, had one or two of the berries in his gullet.

The specimens figured are an adult male in spring plumage and a young bird lately out of the nest, both being in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, ♀, *c*, *d*, *pull.* Sandön, Finland, July 4th, 1858 (*H. E. D.*). *e*, ♂. Danzig, March 9th, 1861 (*H. E. D.*). *f*. Christiania, November 11th, 1867 (*R. Collett*). *g*, ♀. S. Wermland, April 30th, 1864 (*H. Wheelwright*). *h*, ♂. Stockholm, December 1871; *i*. Wermland, December 1871; *k*, *l*, *m*, ♂, *n*, ♀. Stockholm, January 1872; *o*, ♂, *p*, *q*, *r*, *s*, ♀. Stockholm, February 1872 (*Meves*). *t*. Denmark (*Mus. Copenhagen*). *u*, *v*, *w*, *x*, *y*, Liège, 1871 (*Baron de Selys*). *Specimens figured—z*, ♂. Stockholm, March 2nd, 1872 (*Meves*). *a a*. Archangel, August 9th, 1872 (*Piottuch*).

E Mus. J. H. Gurney, jun.

a, ♀ *juv.* Halligarth, Shetland, October 30th, 1866 (*H. L. Saxby*). *b*, ♀ *juv.* Worstead, November 21st, 1866. *c*, ♂. Middleton, near Lynn (*Newcome*). *d*, *juv.* —— (*J. H. G.*).

E Mus. Baron A. von Hügel.

a, *juv.* Onega, N. Russia, August 11th, 1871 (*Meves*).

E Mus. H. B. Tristram.

a, ♀. Norton, Durham, December 14th, 1866. *b*, ♂. Castle Eden, Durham, December 26th, 1866 (*H. B. T.*).

Genus MUSCICAPA.

Rubetra apud Brisson, Orn. iii. p. 436 (1760).
Muscicapa, Linnæus, Syst. Nat. i. p. 326 (1766).
Emberiza apud Scopoli, Ann. I. Hist. Nat. p. 146 (1769).
Sylvia apud Latham, Ind. Orn. ii. p. 517 (1790).
Butalis apud Boie, Isis, 1826, p. 973.
Saxicola apud Sykes, P. Z. S. 1832, p. 92.
Erythrosterna apud Bonaparte, Comp. List, p. 44 (1838).
Hedymela apud G. R. Gray, Hand-l. i. p. 321 (1869).
Ficedula apud Collett, Forh. Vidensk. Selsk. Christiania, 1872, p. 198.

The Flycatchers form a natural and very distinct group, allied on the one side to the Shrikes, and on the other to the Ampelidæ through *Ptilogonys*. They inhabit the Palæarctic, Oriental, and Ethiopian Regions, four species being found in the Western Palæarctic Region. They inhabit groves, gardens, and the borders of forests, and are generally to be seen on the topmost boughs of the trees and bushes. They feed almost entirely on insects of various kinds, and generally take their stand on some open place, such as a bare branch or the top of a rail or post, whence they dart off on the approach of an insect, and return to their post of observation when they have captured their prey, which they apparently do with ease. Their flight is swift and graceful; but they do not appear, as a rule, to traverse long distances. Some of the species have no regular song, whereas others have varied and pleasing notes. They place their nest, which is somewhat carelessly constructed, but tolerably large, in the hole of a tree or wall; and some species deposit plain greenish-blue eggs, whereas others lay eggs which are mottled and spotted with reddish on a pale greenish or whitish ground.

Muscicapa grisola, the type of the genus, has the bill moderately short, broad, and depressed at the base, the tip of the upper mandible decurved and slightly toothed; nostrils basal, oval, partly concealed by stiff feathers directed forward; gape furnished with stiff, long bristles; wings rather long, pointed, the first quill very short, the second rather longer than the fifth, the third longest; tail moderately long, even, or slightly emarginate; feet short and feeble, tarsus short, slender, covered in front with four large and three inferior scutellæ, which are rather indistinct or partly blended; claws long, compressed, arched, and acute.



Mintern Bros. imp

SPOTTED FLYCATCHER.
MUSCICAPA GRISOLA.

MUSCICAPA GRISOLA.

(SPOTTED FLYCATCHER.)

Muscicapa, Briss. Orn. ii. p. 357, pl. xxxv. fig. 3 (1760).
Muscicapa grisola, Linn. Syst. Nat. i. p. 328 (1766).
? *Motacilla ficedula*, Linn. tom. cit. p. 330 (1766).
Le Gobe-mouche, Buff. Hist. Nat. Ois. iv. p. 517 (1778).
Butalis, Boie (*Muscicapa grisola*, Linn.), Isis, 1826, p. 973.
Butalis montana, C. L. Brehm, Vög. Deutschl. p. 220 (1831).
Butalis pinetorum, C. L. Brehm, op. cit. p. 221 (1831).
Butalis africana, Bp. Compt. Rend. 1854, i. p. 652.
Butalis alpestris, C. L. Brehm, Vogelfang, p. 80 (1855).
Butalis domestica, C. L. Brehm, op. cit. p. 80 (1855).
Muscicapa griseola (L.), G. R. Gray, Hand-list of B. i. p. 321. no. 4811 (1869).

Gobe-mouche gris, French; *Yarathão*, *Papa-moscas*, Portuguese; *Papamoscas*, Spanish; *Pigliamosche*, Italian; *Zanzarel*, Maltese; *Sorsh*, Arabic; *gefleckter Fliegenfänger*, *grauer Fliegenfänger*, German; *Vliegenvanger*, Dutch; *Graa Fluesnapper*, Danish; *Graa Fluesnapper*, Norwegian; *Grå Flugsnappare*, Swedish; *Harmaja-Kärväisieppaaja*, Finnish; *Pienka*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 565. fig. 1; Werner, Atlas, *Insectivores*, pl. 6; Kjærb. Orn. Dan. taf. xv.; Frisch, Vög. Deutschl. taf. 22. fig. 2 B; Fritsch, Vög. Eur. taf. 24. fig. 4; Naumann, Vög. Deutschl. taf. 64. fig. 1; Sundevall, Svensk. Fogl. pl. 17. fig. 1; Gould, B. of Eur pl. 65; id. B. of G. Brit. ii. pl. 19; Schlegel, Vog. Nederl. pl. 115.

Ad. pileo pallidè brunneo plumis centraliter fuscis, frontis plumis albido marginatis: corpore suprà griseo-fusco: alis et caudâ saturatè fuscis: remigibus secundariis cum tectricibus alarum extùs albicante fusco marginatis: corpore subtùs albido: gulâ, abdomine et crisso purè albis: pectore summo pallidè fusco lavato, pectore et colli lateribus fusco-griseo striatis: hypochondriis sordidè lutescente fusco tinctis: subalaribus et axillaribus sordidè vinaceo-cervinis: rostro brunneo, ad basin mandibulæ pallidiore: iride fuscâ: pedibus nigris.

Juv. capite et corpore suprà fuscis, maculis numerosis albidè testaceis notatis: subtùs albus, gulâ et pectore sordidè fusco notatis: alis et caudâ ut in adulto picturatis, sed secundariis intimis conspicuè fulvido-cervino marginatis, et tectricibus alarum majoribus valdè cervino apicatis.

Adult Male (Piedmont, 17th May). Crown light brown, the feathers with dark brown centres, the margins to those on the forehead nearly white, nape, back, wings, and tail hair-brown, the wings and tail rather darker; inner quills and wing-coverts narrowly margined with pale brown; chin, upper throat, and abdomen white, the rest of the underparts dull white, the upper breast washed with light brown; sides

of the throat, breast, and flanks somewhat sparingly streaked with dull hair-brown, a few streaks being also on the chin and upper throat; flanks tinged with yellowish brown; but the under wing-coverts and axillaries are warm though pale vinous buff; beak dark brown; iris hazel-brown; legs black. Total length about 5·5 inches, culmen 0·52, wing 3·35, tail 2·5, tarsus 0·6.

Female. Similar to the male.

Young (Hampstead, near London, September 1870). Head, hind neck, back, rump, and scapulars buffy white, each feather bordered with hair-brown, giving a very spotted appearance; inner secondaries broadly margined with fulvous buff, and the larger wing-coverts broadly tipped with broad buff; underparts white, slightly marked on the breast and throat with brown.

Throughout the whole of Europe, as far north as about 70° N. lat., the present species is very generally distributed, and in most parts a common summer visitant. In Africa it is found as far south as the Cape of Good Hope, and in Asia as far east as Dauria.

In Great Britain it is a common summer visitant, arriving in April or in May, and leaving again late in August or early in September. In all counties of England it is one of the best-known of our summer visitants, but is rather less numerous in Scotland. It arrives with tolerable regularity in the spring; and Mr. Cecil Smith informs me that he has remarked that it arrives in Somerset between the 2nd and 7th of May, and only once did he see one as early as the 28th of April. He adds that he does not think it is so common on the Channel Islands as on the mainland. In Ireland, Thompson says, it is a regular summer visitant to some parts of the island; and in Scotland it becomes rare towards the north; but it occurs, though rarely, on the Shetland isles, where Dr. Saxby met with it twice, in June and again in September, 1859, at Halligarth; and Messrs. Baikie and Heddle (Hist. Nat. Orcad. i. p. 33) say that one was shot at Clestron, in the Orkney isles, in 1827.

I do not find any record of its occurrence in Greenland, Iceland, or the Færoes; but in Scandinavia it is a tolerably common species. Mr. Collett says that it is distributed over all Norway, and, according to Sommerfelt, breeds as high as Polmak, in East Finmark. It is most numerous on the Trondhjems fiord, and in many portions of the south and west coasts.

In Sweden it is a common and generally distributed summer visitant, arriving early in May and leaving about the middle of September. It is found up in Lapland, both on the Swedish and the Finnish side, and is common and generally distributed throughout Finland also. In Russia it ranges as far north as Archangel, and is, Mr. Sabanäeff informs me, numerous in Central Russia, but in the Ural he did not trace it far north. Throughout the whole of continental Europe I find it, generally speaking, recorded as common during the summer season, but in some localities it is less numerous than in others. Borggreve says that is common throughout the north of Germany, both in the plains and in the mountains; it is recorded by Kjærbölling as numerous in Denmark, and is, Mr. Labouchere informs me, very common in Holland. In Belgium and on the Lower Rhine it is also a common bird; but in some parts of Rhenish Prussia it is by no means numerous. Mr. Sachse informs me that, although it used formerly to be common at Altenkirchen, it has latterly become rather rare than otherwise, and during the last few years he has not found its nest there. It arrives, he says, from the 1st to about the middle of May, and leaves again in the early part of September. In France, Portugal, and Spain

it is generally distributed, but is, as elsewhere, only a summer resident. Colonel Irby says that at Gibraltar they arrive from the 3rd to the 11th of May, and he has obtained an egg as early as the 24th of that month. In the autumn they leave some time previous to the middle of September; but he omitted to record the exact dates when the last were seen. Herr A. von Homeyer, who met with it on the Balearic isles, remarks (J. f. O. 1862, p. 256) that not only does it occur on the mountains but is common even on the small rocky isles, even where there are no trees. In Italy, Sardinia, Sicily, and Corsica it is common during summer; and Mr. C. A. Wright says that it is common in Malta during the two seasons of passage, being the last bird that leaves the island in the spring. Lord Lilford found it common in Corfu and Epirus during the summer; and both Lindermayer and Von der Mühle say that it breeds in Greece, but leaves for the south in September. I met with it during the early summer in Austria and in the countries skirting the Danube; but it appears to remain very late in Turkey; for a specimen sent to me by Mr. Robson was obtained in Turkey in Asia on the 4th October. In Southern Russia it is, Professor von Nordmann says, excessively common even in the barren treeless steppes; and in Asia Minor it is also numerous, and would appear to remain there occasionally, if not regularly, over the winter; for a specimen given to me by Mr. C. Danford was shot near Smyrna on the 27th November. Lord Lilford informs me that he met with it sparingly in Cyprus in April and May of the present year (1875); and Canon Tristram obtained it in Palestine, where it would seem to be only a summer visitant; for he writes (Ibis, 1867, p. 361) as follows:—"Our common Flycatcher was first obtained on the 23rd April, but continued to arrive for three days in great numbers, remaining to breed in all parts of the country, its favourite nesting-places being in the branches of gnarled old trees overhanging the paths."

Captain Shelley and Mr. J. H. Gurney, jun., both inform me that it is but a rare bird in Egypt and Nubia. The former obtained only one specimen at Alexandria, in April; and the latter informs me that he obtained one on the 22nd of April, and from time to time saw single birds up to the second week in June. Von Heuglin says (Orn. N.O.-Afr. p. 439) that it arrives in Egypt in August and September, and ranges into Nubia, Sennaar, and Abyssinia. In October he met with it on the Adel and Somali coasts, where it was not uncommon, and in December near Aden. He further says that he believes it breeds in Lower Egypt. On the west side of Africa it is also found very generally distributed. Loche says that it is tolerably common in Algeria; and Colonel Irby says (*l. c.*) that, according to Favier, it is "very common near Tangier, where they arrive in April and May in pairs and small flights, some remaining to nest, the rest passing across the Straits to return in September, when they disappear." Carstensen met with it at Fez; and Mr. Ussher, who sent a specimen from Fantee, says (Ibis, 1874, p. 60) that it is there migratory. The specimen he sent was shot by himself on Connor's Hill, near Cape Coast, in February 1871, and he observed others at the same time. Messrs. Shelley and Buckley also say that it is not uncommon on the Gold Coast. Swainson records it from Senegal, DuChaillu from the Gaboon, Ogobai, and the Rembo river. Dr. Reichenow obtained it in the Cameroons; and Andersson says (B. of Damara Land, p. 129) that it is common in Damara and Great Namaqua Land throughout the year. Mr. E. L. Layard also says that his son procured the present species near Swellendam. I find but little information as to its occurrence on the east side of the continent beyond what is above given, except that Baron C. von der Decken obtained it at Zanzibar.

To the eastward the present species appears to occur at least as far as Kultuk. Mr. Blanford informs me that it is "a common bird throughout the Persian highlands, extremely abundant in places, and generally found wherever there is much vegetation;" and Dr. Henderson obtained it in Ladak. This latter gentleman writes (Lahore to Yarkand, p. 185) as follows:—"A single specimen was obtained on the 22nd of September, in an absolute desert, some 14,000 feet above the sea-level, at the foot of the Suket Pass, Ladák, a few miles south of what may be considered the boundary of Yarkand." Mr. A. O. Hume received a specimen from Jodhpoor, and says, in a note appended to the above information recorded by Dr. Henderson, that he has since "received several other specimens from the Sambhur Lake and other parts of Western Rajpootana, proving that the European Flycatcher is a regular winter visitant to Western Continental India." Severtzoff says that it breeds and is found during passage throughout Turkestan; and, according to Dr. Dybowski (J. f. O. 1872, p. 446), it is found as far east as Kultuk, in Dauria, where it occurs during passage in spring late in May, and again in the autumn, and breeds in the lowlands of Irkutsk. To this note Mr. L. Taczanowski adds that the single example sent by Dr. Dybowski from Darasun is rather paler than the usual type of the present species.

Exceedingly tame and familiar, and frequenting by choice the vicinity of human habitations, the Spotted Flycatcher is one of our best-known British birds. In a garden where the birds are unmolested the Robin and the Flycatcher are sure to be amongst the first who take advantage of the protection afforded to the feathered race; and should the house be covered with creepers, one may usually see a Flycatcher's nest built close to a window or in the porch; and even if disturbed the bird will pertinaciously return to the same place if it has once chosen it for the purpose of nidification. It is usually seen sitting on a fence, flower-stick, or a scathed bough, in fact in any open position, from which it takes short aërial excursions in quest of passing insects, and returns to devour its prey on its favourite perch. It frequents groves, the outskirts of woods, open spots in plantations and gardens, and not only catches its prey on the wing, but searches amongst the foliage of the trees and bushes, or even on the ground, for insects of various kinds, which form its food. I have, when in Sweden, seen this bird searching for insects on the ground in the fir-woods; and when disturbed they immediately took refuge in the trees; but usually I have found it in the trees, and very seldom on the ground. The flight of this Flycatcher is undulating and very swift; but it seems to traverse long distances unwillingly, and usually flies from tree to tree.

Its note is a harsh, rather prolonged, and somewhat melancholy sound, like the syllable *tshee* several times repeated; and the song of the male, if song it can be called (for it is so poor), is nothing but the call-note intermingled with low chirping notes.

Its food consists chiefly of insects of various kinds, flies, gnats, and especially all sorts of winged insects; but Collett says that he has known it to feed on berries in the autumn in Norway, and has seen specimens caught in snares set for Thrushes and baited with the berries of the mountain-ash.

The nest of this bird is placed in very varied places, but most generally in the creepers that twine round the trunk of a tree or against a building, on a beam or in a hole in an old wall or a tree, or in a rotten stump; and I have known it placed in between the bark and the stem of a tree when the bark was loose. It is said to build sometimes in a bush: Mr. Sachse informs me

that he once found a nest in a gooseberry-bush not a metre above the ground. The nest is usually constructed of green moss intermixed with fine roots and a few grass-bents, and lined with bents, wool, hair, and feathers; but sometimes it picks up all sorts of refuse thrown out of a house to decorate its nest. Mr. Collett says that one was brought to him which was chiefly built of all sorts of clippings of all colours—thread, paper, &c. &c. I have generally found the nests constructed of moss as above stated, but sometimes with a very few feathers in the lining. Naumann says that both male and female cooperate in building the nest, which is usually constructed late in May or early in June, and that they both take their turn at incubation, which lasts fourteen days. The eggs are deposited early in June; and four or five, most frequently the latter number, form the usual complement. In colour the eggs of this bird are pale blue-green or sea-green, blotched with two shades of red, the surface-spots being much darker than the shell-markings; sometimes these latter are pale purplish red in tinge, but usually pale dull reddish. In size eggs in my collection vary from $\frac{27}{40}$ by $\frac{22}{40}$ to $\frac{29}{40}$ by $\frac{23}{40}$ inch. Professor Newton refers to a curious fact respecting the nidification of this species recorded by the late Mr. Thomas Andrew Knight. A Flycatcher, he says, "built in his stove for several successive years. He observed that the bird quitted its eggs whenever the thermometer in the house was above 72° Fahr., and resumed her place upon the nest again when the thermometer sunk below." As a rule but one brood is raised in the season; but should the nest be destroyed, a second one is usually built, if not too late in the season.

The specimens figured are an old male and a young bird in first plumage, they being those above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Near London, May 20th, 1870. *b, c, d*. Hampstead, June 1870 (*Davy*). *e, f, juv., g, juv*. Hampstead, September 1875 (*Davy*). *h*, ♂. Cookham, August 1866 (*W. Briggs*). *i*. Pagham, July 1870 (*R. B. Sharpe*). *j*. Hants, 1847 (*P. L. Sclater*). *k*, ♂. Piedmont, May 17th, 1870 (*Salvadori*). *l*. Uima, Archangel, June 19th, 1874 (*J. N. Piottuch*). *m*, ♀. Asia Minor, October 4th, 1870 (*Robson*). *n*, ♀. Smyrna, November 27th, 1874 (*C. Danford*). *o*. Persia (*Blanford*).

E Mus. H. B. Tristram.

a, ♂. Northrepps, Norwich, July 24th, 1866 (*H. B. T.*). *b*. Castle Eden, Durham (*H. B. T.*). *c*, ♀. Plain of Gennesareth, April 28th, 1864 (*H. B. T.*). *d*, ♂. Mount Carmel, Palestine, April 23rd, 1864 (*H. B. T.*).

E Mus. Ind. Calc.

a, ♀. Narmanshir, S.E. Persia, April 16th. *b, c*, ♂, *d*, ♀, *e*. Shiraz (*Major St. John*). *f, g*, ♂. Isfahán. *h, i*, ♂. Kohrúa, north of Isfahán. *k*, ♂. Elburz Mountains, August 10th (*W. T. Blanford*).

E. Mus. Howard Saunders.

a, b, c, ♂, *d, e*, ♀. Malaga and Granada, Spain, spring and summer.



Meinertzhagen del. Mintern Bros. imp

PIED FLYCATCHER.
FEMALE AND YOUNG



Mintern Bros. imp.

1, WHITE COLLARED FLYCATCHER.
MUSCICAPA COLLARIS.
2, PIED FLYCATCHER.
MUSCICAPA ATRICAPILLA

MUSCICAPA ATRICAPILLA.

(PIED FLYCATCHER.)

The Cold Finch, Edwards, Nat. Hist. p. 30, pl. 30 (1750).
Muscicapa nigra, Briss. Orn. ii. p. 381 (1760).
Rubetra anglicana, Briss. Orn. iii. p. 436 (1760).
Muscicapa atricapilla, Linn. Syst. Nat. i. p. 326 (1766).
Motacilla ficedula, Linn. tom. cit. p. 330 (1766).
Emberiza luctuosa, Scop. Ann. I. Hist. Nat. p. 146. no. 215 (1769).
Muscicapa maculata, P. L. S. Müll. Natursyst. Suppl. p. 171 (1776).
Sylvia ficedula (L.), Lath. Ind. Orn. ii. p. 517 (1790).
Muscicapa muscipeta, Bechst. Gemeinn. Naturg. Deutschl. iv. p. 502 (1795).
Muscicapa luctuosa, Temm. Man. d'Orn. p. 101 (1815).
Muscicapa alticeps, C. L. Brehm, Vög. Deutschl. p. 225 (1831).
Muscicapa fuscicapilla, C. L. Brehm, tom. cit. p. 226 (1831).
Muscicapa atrogrisea, C. L. Brehm, tom. cit. p. 227 (1831).
"*Muscicapa speculigera*, Selys," Bp. Consp. Gen. Av. i. p. 317 (1850).
"*Muscicapa speculifera*, Selys," Schlegel, Vog. van Nederl. p. 225 (*laps. cal.*, 1854–58).
Hydemela atricapilla (L.), G. R. Gray, Hand-list, i. p. 321. no. 4821 (1869).
Ficedula atricapilla (L.), Collett, Förh. Vidensk. Selsk. Christiania, 1872, p. 198.

Gobe-mouche noir, French; *Papa-moscas*, *Cerrojillo*, Spanish; *Zanzarel*, Maltese; *Alliuzza nera*, Italian; *der schwarzgraue Fliegenfänger*, German; *de zwartgraauwe Vliegenvanger*, Dutch; *Svalespurv*, *Fluesnapper*, Danish; *Sortoch hvid Fluesnapper*, Norwegian; *Svart och hvit Flugsnappare*, Swedish; *Mustinkirjava*, *Kärväissieppaja*, Finnish; *Mucholovka pestruchka*, Russian.

Figuræ notabiles.

Edwards, *l. c.*; D'Aubenton, Pl. Enl. 565. figs. 2, 3, 668. fig. 1; Werner, Atlas, *Insectivores*, pl. 8; Kjærb. Orn. Dan. taf. xv.; Frisch, Vög. Deutschl. taf. 24. fig. 2; Fritsch, Vög. Eur. taf. 21. fig. 6, taf. 24. fig. 5; Naumann, Vög. Deutschl. taf. 64. figs. 2, 3, 4; Sundevall, Sv. Fogl. taf. xvii. figs. 2, 3; Gould, B. of Eur. pl. 63. fig. 1; id. B. of G. Brit. ii. pl. xvii.; Schlegel, Vog. Nederl. pl. 116; Roux, Orn. Prov. pl. 150.

♂ *ad. ptil. æst.* capite summo et capitis lateribus, dorso, uropygio, scapularibus et tectricibus alarum minoribus nigris: corpore subtùs albo: maculâ frontali albâ: remigibus nigricantibus, primariis intimis ad basin et secundariis extimis in dimidio basali albis, secundariis intimis albis nigro apicatis: tectricibus alarum majoribus albo apicatis: caudâ nigrâ, rectricibus tribus externis in pogonio externo albis valdè nigro terminatis: rostro et pedibus nigris, iride fuscâ.

♀ *ad.* corpore suprà et capite summo brunneis: remigibus nigro-fuscis, primariis intimis in pogonio externo

ad basin et secundariis ad basin albis speculum formantibus, secundariis intimis albo marginatis, et tectricibus alarum majoribus albo apicatis: caudâ ut in mare sed nigro-fusco nec nigro: corpore subtùs sordidè albo.

Adult Male (Altenkirchen, Rhenish Prussia). Head above, including the sides of the face and auriculars, back, rump, scapulars, and lesser wing-coverts deep black; entire underparts pure white; on the forehead a small white patch; quills blackish brown, the inner primaries white at the base, this colour increasing in area on the secondaries until the innermost ones have merely the terminal portion black; larger wing-coverts broadly tipped with white; rump duller and greyer than the back; tail black, the three outer rectrices with two thirds of the outer web from the base white, on the outermost this colour extending over the shaft to the inner web; bill and legs black; iris brown. Total length about 5 inches, culmen 0·48, wing 3·05, tail 2·15, tarsus 0·7.

Adult Female (Altenkirchen, 19th May). Upper parts dark hair-brown; wings blackish brown, the inner primaries white on the basal portion of the outer web, secondaries white at the base, making a small alar patch; inner secondaries margined, and the larger coverts tipped with white; tail as in the male, but much duller in tinge; underparts dull white.

Nestling (Belgium). Upper parts dull blackish brown, almost every feather with a terminal drop-shaped or almost round mark of dull clay-ochre; wings as in the female, but the coverts are marked like the back; undersurface of the body white, tolerably closely, but somewhat irregularly, spotted with blackish brown.

Male in autumn (Highgate, 13th September). Differs from the male in spring plumage in having the upper parts dark sooty brownish instead of black; the white frontal patch is present, though somewhat obscured; the wings and tail are as in the spring plumage; and the underparts are white, but slightly washed on the breast and flanks with buff.

Obs. The younger males very closely resemble the females, and can only be distinguished by being somewhat darker; when they attain the black plumage they have at first a rather smaller white frontal patch and less white on the wings. The full summer plumage is not worn for long; for I have a male from Piedmont, shot on the 21st April, which has the underparts in full summer dress, but the upper parts are still brown, variegated with black feathers, as these latter are pushing through every here and there; and in July they commence moulting, some being in full winter dress by the end of August.

The range of the present species does not extend far eastward beyond the limits of Europe proper, but during the winter it is met with in Africa at least as far south as the Gambia.

In Great Britain it is met with during the summer season; and though locally distributed, it is not very rare in some parts of the country, being most frequently met with in the vicinity of the lakes of Cumberland and Westmoreland. Professor Newton, writing respecting its range in England, says (Yarr. Brit. Birds, i. p. 230), "Pennant mentions an example of this bird killed near Uxbridge, in Middlesex; and a good many have since been observed in the same county, as well as in all those of the south and east from Cornwall to Norfolk. In the Midlands it appears more rarely; but it has been noticed once or oftener in Leicester, Derby, Stafford, Worcester, and Hereford. Further north its occurrence is less irregular; and in some parts of the West Riding of Yorkshire, Durham, and, as above stated, certain localities in the Lake district, it has its headquarters in England, though it also breeds yearly in a few places in North Wales, and

the English counties of the Welsh border, and is recorded as having occasionally done so in North Devon, Somerset, Gloucester, Oxford, Wilts, Dorset, the Isle of Wight, Surrey, and Norfolk." Mr. C. Bygrave Wharton also says (Ibis, 1865, p. 234) that a nest with three eggs was taken about the year 1836 near Willesden.

In Scotland, Mr. Robert Gray says (B. of W. of Scotl. p. 69), "in the eastern and midland counties it is not improbable that this Flycatcher will yet be found in limited numbers. It has not up to this time been traced further west than Stirlingshire, in which county, as I have been informed by Mr. Brown, three examples at least have been met with. It has likewise been taken twice in Aberdeenshire, in 1845 and 1849; and Mr. Thomas Edward has sent me word of its occurrence also in Banffshire. The late James Wilson mentions the species in his 'Voyage Round Scotland,' a specimen killed in Caithness having been seen by him in the collection of the late Mr. Sinclair, of Wick. In addition to these instances, Dr. Smith, of Edinburgh, has kindly informed me that a male bird of this species was shot by Mr. Stevenson in a garden near Dunse, in the first week of June 1855, and that another male was seen in the same place in June the following year. My friend, Mr. W. Sinclair, whose drawings embellish this volume, has also informed me that he saw one in May 1867, in a garden in Dunbar, where he watched it for some time. I have also the gratification of recording the fact of the Pied Flycatcher breeding in Inverness-shire—Mr. E. S. Hargitt, of London, having obligingly sent me word that he has in his collection the eggs taken near Drumnadrochit, in that county, in 1864.

"Regarding the occurrence of this species in Aberdeenshire, Mr. Angus has been kind enough to send me the following particulars:—'This beautiful species rarely occurs with us. A specimen in the Aberdeen Museum was shot at Hazel Head, in May 1842, by Mr. Mitchell, who informed me that he saw another in a cherry-tree at Arthur's Seat. A male was obtained at Brucklay Castle in May 1849.' To these Aberdeenshire records I may add the occurrence of a pair, male and female, near Peterhead, previous to 1835, in which year Mr. Arbuthnot, the founder of the Peterhead Museum, where the specimens are still preserved, furnished a list of local birds for publication by the compiler of the statistical account of the parish.

"The Stirlingshire specimens already alluded to were observed by Mr. Peter Allan, bird-stuffer, Stirling, who watched a pair at Ballochlean on the 18th of June, 1867, and by Mr. Thompson, Dunmore, who shot a specimen on the Dunmore estate ten years ago.

"Regarding its occurrence in Orkney, Messrs. Baikie and Heddle write as follows:—'Often seen in summer. Several were seen in Sandy in October 1809. A small flock appeared at Elsness on 12th May, 1822, after a gale of north-east wind. One was shot in Sandy, 15th May, 1839. Two killed near Kirkwall in 1844 are now in the Kirkwall Museum.'"

In Ireland it does not appear to have occurred; nor does it range as far north as Iceland or Greenland. It has occurred on the Færoes; and, according to Captain Feilden, Müller records a single flock making its appearance in May 1846. One was shot and sent to the Museum at Copenhagen.

In Norway it breeds in numbers in the lowlands up to Salten; and Mr. Collett found several pairs nesting near Tromsö in 69° 40′ N. lat. North of the Arctic circle it is rarer, but occurs in Lapland; on the fell-sides it frequently ranges up into the birch region, as, for instance, on the Dovre. In Sweden, according to Nilsson, it is a tolerably common summer visitant, and makes

its appearance about the 25th April, or from then to the early part of May, the males always arriving first, and is common from Skåne to Lapland. In Dalecarlia it is numerous. Lowenhjelm observed it as far north as Lycksele and Quickjock; and it is numerous in the woods near Stockholm. In August it swarms in Southern Sweden on its passage southward; and by the middle of September all have left the country. In Finland it is tolerably common in the district of Kuopio, and has been met with as far north as Uleåborg. Mr. Sabanäeff informs me that in Central Russia it is quite as common as *M. grisola*, but does not range so far to the north or to the south. In the Ural it occurs as far north as 57° N. lat., on the eastern slope, and is met with in the Bashkir birch-woods. I have no data respecting its occurrence in Poland; but in North Germany it is in some localities by no means uncommon during the summer season, and, it would appear, is gradually increasing in numbers. Mr. W. Hintz says (J. f. O. 1863, p. 415) that he first observed it in 1848, when he obtained its nest, but never used to see it during his rambles in Pomerania, except on the Baltic coast during migration. In 1865, however, he says, it had increased in numbers so much that within a radius of three fourths of a mile there were about thirty nests. Dr. Altum also remarks (J. f. O. 1863, p. 105) that, though years back it used merely to pass through Munster during passage, it now breeds there, and its nest has been found in the centre of the town. Mr. Pässler remarks that in Anhalt it frequents the hilly as well as the level districts during the breeding-season. It breeds in Saxony and in the oak-forests of Nassau and other parts of Western Germany. When at Altenkirchen, in Rhenish Prussia, this last spring, my host Mr. Carl Sachse took me to an oak-grove where several pairs annually breed, and he informed me that during the long period of years he has resided in that country he has never but once, and then during passage, seen an old male in the full black plumage—and that all the males that breed in that vicinity wear a dress resembling that of the female, but rather darker in colour. When I was there the birds were paired, and had taken possession of their nesting-quarters; therefore in order to obtain specimens I shot three pairs, and found all three of the males (the sexes of which I personally verified by dissection) very nearly resembling the females. I name this circumstance without being able to account for the fact that in one particular locality the males appear never to assume the fully adult dress; for Mr. Sachse assures me that he has frequently shot males in the grove in question and has never found them in any plumage except that worn by those which I shot there. I may add that I can find no difference between these birds and males from other parts of Europe which have not assumed the full plumage.

In Denmark, according to Kjærbölling, large numbers are seen on migration late in April or early in May, and again in August or September. A few remain to breed here and there, being most numerous in the Duchies and the south-eastern portion of Jutland. In 1848 about twelve pair bred in or near the Thyrsbæk Park.

In Holland and on the Island of Borkum the Pied Flycatcher is met with in considerable numbers during migration; and in Belgium also it is common on passage, and some few nest in the Ardennes. In France it is not rare; and, according to M. Crespon, it is very numerous near Nîmes, where it arrives late in April and leaves in September. Messrs. Degland and Gerbe say that it breeds near Boulogne and Paris. In the south of France it is very common. It occurs in Portugal; and the Rev. A. C. Smith says (Ibis, 1868, p. 438) that it is tolerably common in

the large and central province of Bevia. Dr. E. Rey also states (J. f. O. 1872, p. 144) that he met with a numerous flock in a chestnut-wood on the Sierra de Manchiqué. It has been met with in Spain by Lord Lilford, Colonel Irby, and Mr. Howard Saunders; and the last-named gentleman speaks of it (Ibis, 1871, p. 206) as being common in spring, breeding at Aranjuez, and possibly near Granada and in other cool sites. I saw several specimens, and shot a female in May, at San Felio de Llobregat, not far from Barcelona. Dr. A. E. Brehm says that it breeds not unfrequently in North and Central Spain, and is elsewhere common on passage. Mr. A. von Homeyer observed it on the Balearic Islands during migration, and says (J. f. O. 1862, p. 256) that it breeds in the hills, in the woods where *Quercus ilex* and *Pinus halepensis* grow, as, for instance, at Belvedere, near Palma. Passing eastward, again, I find it recorded by Bailly as common in Savoy, where numbers breed. In Italy it is said by Count Salvadori (Ucc. d'Ital. p. 55) to be generally distributed; and he thinks that Savi must be in error in stating that it is not found in Tuscany. In Sardinia it must be rare, as Salvadori merely says (J. f. O. 1865, p. 132) that there are two specimens obtained there in the museum; and Mr. A. B. Brooke only obtained one specimen, in April, whilst collecting there. In Sicily, Professor Doderlein says, it is by no means so common as *Muscicapa collaris*. It visits Malta during the two seasons of migration; but Mr. C. A. Wright says (Ibis, 1864, p. 59), though often seen in the valleys and by the road-sides in the neighbourhood of trees, it is not so numerous as the Spotted Flycatcher. It appears to be found in Greece only during migration; for Von der Mühle frequently obtained it in the autumn, and Erhardt mentions it as visiting the Greek islands in spring and autumn.

In Southern Germany it is met with during passage, and breeds in some localities. Dr. A. Fritsch says (J. f. O. 1871, p. 200) that it is not common in Bohemia, but appears to breed near Prague, as it is often caught during the summer. In May 1870 he found it numerous together with *M. collaris* in the oak avenues near Frauenberg. I observed it during the spring of 1866 in the oak-woods in Wallachia; and have received specimens from near Constantinople through Mr. Robson. In Southern Russia it is stated by Professor von Nordmann to be very common in the neighbourhood of the Black Sea; but Mr. Goebel says (J. f. O. 1870, p. 443) that in the Uman district it occurs only during passage, and is not even then numerous, and he never found it there during the breeding-season. It is recorded by Canon Tristram (Ibis, 1867, p. 361) as being a somewhat scarce summer resident in Palestine, where he first observed it on the 23rd April.

In Egypt it occurs during passage; and Von Heuglin says that he observed it late in March and early in April near Alexandria, in gardens and on the borders of the desert. In North-west Africa it is recorded by Loche, who says that it occurs in the wooded districts of Algeria. Mr. O. Salvin states (Ibis, 1859, p. 311) that it is not uncommon about Souk Harras, but more rare in the salt-lake districts; and Mr. J. H. Gurney, jun., observed it at Gardaia. Mr. C. F. Tyrwhitt-Drake saw it during the spring migration in Morocco; and I possess a specimen from Tunis. It has occurred as far south in Africa as Gambia, whence Mr. Sharpe has a specimen. Messrs. Webb and Berthelot record it from Teneriffe, where, Dr. C. Bolle says, it only occasionally appears during winter; but Mr. Godman states that when there he never observed it.

To the eastward it has been met with as far as Persia, where, Mr. Blanford says, it abounded in the valleys of the Elburz; but he never observed it in Southern Persia.

In its habits this Flycatcher more closely resembles the White-collared than the Spotted

Flycatcher. I have usually found it in groves, usually amongst old oaks or chestnuts, where the trees are, to some extent, decayed and it can find convenient holes for the purpose of nidification. It is a restless rather than a shy bird, and is seldom seen seated quietly, but usually moving amongst the trees, and frequently flitting amongst the branches at the tops of the large oaks. I have seen it lift and slightly jerk the wings, and jerk whilst spreading the tail a little. It appears to approach habitations much less frequently than the Spotted Flycatcher, and is much more of a forest-hunting species than that bird. It feeds on insects, more especially flies of various sorts, which it catches on the wing with great dexterity; and I have sometimes observed it flitting amongst the foliage, evidently picking some insect off the leaves. It is also said occasionally, but rarely, to feed on worms. Sometimes it will take its station on some dry branch, and thence make short aërial excursions in quest of a passing insect, with which, when caught, it returns to its old perch. Naumann states that it also feeds on berries, such as currants, elderberries, bird-cherries, &c.

It breeds in groves where old, partially hollow, non-evergreen trees are scattered about, especially oaks, beeches, and aspen trees, usually in rather thin groves, and but seldom in dense woods. The nest is placed in a hole in a tree, most frequently in an old deserted Woodpecker's hole, or where a Titmouse has had its habitation; and usually a hole is selected the entrance to which is small. The nest itself is rather loosely, but not carelessly, constructed of moss, dried bents, and rootlets, and lined with feathers, wool, or hair. The eggs, from four to six, and sometimes even seven, in number, are delicate pale blue-greenish white, occasionally speckled with pale reddish brown, and measure from $\frac{26}{40}$ by $\frac{20}{40}$ to $\frac{28}{40}$ by $\frac{22}{40}$ inch in size. I have eggs taken in May; and in Mr. Sachse's collection I found eggs taken on the 13th and 21st of that month.

The specimens figured are, on the same Plate with *Muscicapa collaris*, an adult male in full spring plumage from Altenkirchen, and on a second Plate the female and young, these being the specimens described and in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b. Highgate, London, September 13th, 1869 (*Davy*). *c*, ♂, *d*, ♀. Valencia, April 20th, 1872 (*Howard Saunders*). *e.* San Felio de Llobregat, Spain, May 6th, 1866 (*H. E. D.*). *f*, ♂. North France (*Dr. Herrmann*). *g*, ♂. Sardinia, April 1870 (*Salvadori*). *h*, ♂, *i*, ♂. Piedmont, Italy, April 21st, 1870 (*Salvadori*). *k*, ♂. Piedmont, September 1869 (*Salvadori*). *l*, ♀, *m*, ♀, *n*, ♂, *o*, ♂. Altenkirchen, May 19th, 1874 (*H. E. D.*). *p*, ♂. Altenkirchen (*C. Sachse*). *q*, ♂. Silesia, 1866 (*Dr. Kutter*). *r*, ♂. Ortakeuy, Turkey, April 6th, 1865 (*T. Robson*). *s*, ♂. Ortakeuy, April 23rd, 1869 (*T. Robson*). *t*, ♂. Tunis (*Antinori*). *u, pullus.* Near Brussels (*Dubois*).

E Mus. G. E. Shelley.

a, ♂. Egypt, April 1871 (*G. E. S.*).

E Mus. C. A. Wright.

a, ♂. Malta, April 24th, 1869. *b*, ♀. Malta, April 13th, 1869 (*C. A. W.*).

MUSCICAPA COLLARIS.

(WHITE-COLLARED FLYCATCHER.)

Le Gobe-mouche noir à collier, Buff. Hist. Nat. Ois. iv. p. 520; Pl. Enl. 565. fig. 2 (1778).
Muscicapa atricapilla, var. β, Gm. Syst. Nat. i. p. 935 (1788).
Muscicapa collaris, Bechst. Gemein. Naturg. Deutschl. iv. p. 495 (1795).
Muscicapa albicollis, Temm. Man. d'Orn. p. 100 (1815).
Muscicapa streptophora, Vieill. Faun. Fr. p. 145 (1828).
"*Muscicapa melanoptera*, Heckel," Naumann, Naturg. Vög. Deutschl. xiii. p. 245, taf. 352. fig. 1 (1844).
Muscicapa albifrons, C. L. Brehm, Vogelfang, p. 81 (1855).
Muscicapa collaris albifrons, A. E. Brehm, Verz. Samml. C. L. Brehm, p. 3 (1866).
Muscicapa collaris microrhyncha, A. E. Brehm, ut suprà, (1866).
Muscicapa collaris atrostriata, A. E. Brehm, ut suprà (1866).

Gobe-mouche noir à collier, French; *Der weisshalsige Fliegenfänger*, German; *Papa moscas*, Portuguese; *Aliuzza dal collo bianco*, Italian; *Zanzarel*, Maltese; *Hvidhalset Fluesnapper*, Danish; *Halsbands-flugsnappare*, Swedish; *Muholovka belosheyka*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 365. fig. 2; Werner, Atlas, *Insectivores*, pl. 7; Kjærb. Orn. Dan. taf. xv.; Fritsch, Vög. Eur. taf. 21. fig. 10, taf. 22. fig. 3; Naumann, Vög. Deutschl. taf. 65. figs. 1, 2, et 352. fig. 1; Sundevall, Sv. Fogl. taf. xvii. fig. 4; Gould, B. of Eur. pl. 63; id. B. of G. Brit. ii. pl. xviii.

♂ *ad.* pileo, capitis lateribus, dorso, scapularibus, supracaudalibus et caudâ nigris: maculâ frontali, collo, gulâ, gutture et corpore subtùs albis: remigibus nigro fuscis, primariis intimis et secundariis ad basin albis, secundariis intimis, præter apicem nigrum, totis albis: tectricibus alarum majoribus albo terminatis, tectricibus minoribus dorso concoloribus: uropygio albicante: rectrice extimâ utrinque pogonium externum albo notatâ: rostro et pedibus nigris: iride fuscâ.

♀ vix a feminâ *M. atricapillæ* distinguenda.

Adult Male (Malta). Crown, sides of the head and nape, except a large round white patch on the forehead, jet-black, neck all round, on the hind neck to the fore part of the back white; back, scapulars, upper tail-coverts and tail jet-black, the outer web of the first tail-feather on each side marked with white; rump white; quills blackish brown, the inner primaries and secondaries white on the basal portion, the innermost secondaries being only black at the tip and chiefly on the inner web, this white forming a very large alar patch, the larger coverts being also broadly tipped with white; lesser coverts, like the back, deep black; entire underparts pure white, except the feathers on the thighs, which are intermixed black and white; bill and legs black; iris brown. Total length about 5 inches, culmen 0·45, wing 3·15, tail 2·05, tarsus 0·65.

Adult Female (Smyrna, 25th April). So closely resembles the female of the Pied Flycatcher that I can find no character by which it may always be distinguished, though, as a rule, the present species appears to have the white on the base of the primaries more extended and a slightly shorter tarsus. Like the female Pied Flycatcher it has the outer webs of the three outer rectrices white, and has thus much more white on the tail than the male.

The White-collared Flycatcher inhabits Southern and Central Europe during the breeding-season, retiring into Africa for the winter, and has been met with as far east as Persia. It has been included in our British avifauna on the authority of Mr. Gould, who said that he recollected having seen a specimen in the flesh in the possession of Mr. Leadbeater, but he knew no further particulars respecting it. In his 'Birds of Great Britain' he says that this specimen probably went to the late Mr. Lombe, who had a collection of British birds. As there is no proof of any specimen ever having been killed here, the above being the only datum on which it has been included in our British list, I think it premature to consider it a British species.

It does not occur in Norway, but has been added to the Swedish list within the last thirty years by Mr. Meves, of the Stockholm Museum, a well-known ornithologist, who, in 1846, met with it in Gottland, where it is said to be more common than the Pied Flycatcher. He says, in a small pamphlet on a journey he made to the coast, that he has observed it at Borgholm and Ottenby in May, and remarks that he believes that it was overlooked previous to 1846, or mistaken for the Pied Flycatcher, and that it is not a species that has of late years extended its range to Gottland, in support of which belief its annual appearance so far to the westward as Wermland may be mentioned. I do not find any record of its occurrence in Finland or the northern portion of Russia; but Mr. L. Sabanäeff says that it is occasionally met with in the Government of Moscow during the spring migration, and also occurs in those of Kazan and Kieff; and Daniloff states that it remains to breed. Sabanäeff does not include it in his list of the birds found in the Ural. Mr. Fischer speaks of it (J. f. O. 1872, p. 388) as being the rarest of the Fly-catchers found in the St.-Petersburg district, and he has known it sold for as much as 8 roubles (22 shillings). I have no data as to its occurrence in the Baltic Provinces and Poland; but it is certainly found in Northern Germany. Borggreve (Vogelf. Nord-D. p. 99) writes that it is a not uncommon visitant from the south, and has been observed in various parts of the country. It has occurred at least twice in the Thüringer Wald in the spring; and Gloger records it from Silesia; Boeck states that it has been met with near Danzig; and Tobias says that it has once occurred in Ober-Lausitz. Schäfer says that it inhabits the wooded districts near the Mosel; but this is doubted by Borggreve, who never saw it there; and I may add that, though I frequently obtained *M. atricapilla* in that district, I never met with the present species. Dr. E. Rey remarks that it has only lately settled as a summer resident near Halle a. S. He first observed a male in 1865 at Lauchstädt; in 1870 a pair nested close to Halle, and in 1871 a pair also bred in a nest-box in the main promenade in that town. Herr Carl Vangerow records it as being found, though rarely, near Berlin, and adds (J. f. O. 1855, p. 186) that it has been met with breeding in the Zoological Gardens of that town; and, referring to its occurrence in the Rhine country, Mr. Borggreve adds (J. f. O. 1871, p. 220) that it is not rare in the vicinity of Cologne

during the spring migration, though not seen every year. It is found in Denmark during the spring migration, but is rare. Kjærbölling says that Mr. Scheel shot one in a garden at Stege, on Möen, in April 1831, and that it has also been met with on Fyen.

Respecting its occurrence in Holland Mr. H. M. Labouchere writes to me as follows:—"Though very rare, it has several times been observed in Holland. According to Professor Schlegel a nest of this bird was once found near Amsterdam, and another was discovered in the botanical garden at Groningen. In May 1867, I myself observed one of these birds flying about in the elms bordering one of the canals in Amsterdam; and, taking into consideration the season of the year, it is not unlikely that it may have been breeding in the neighbourhood." Baron de Selys-Longchamps says that in Belgium it is of very rare occurrence; and although Degland and Gerbe state that it nests in tolerable abundance in Lorraine, yet De la Fontaine, who paid especial attention, for many years, to the natural history of that province, considers it to be decidedly rare there, and scarcely found beyond the limits of the large forests, except during passage. In the south of France it is a mere visitant; but in Savoy some pairs breed, according to Bailly, especially in the moister parts of the forest about Chamounix, Maurienne, and Tarentaise.

Professor Barboza du Bocage records it as a common species in the northern portion of Portugal; and the Rev. A. C. Smith says (Ibis, 1868, p. 438) that it is stated to be common in the northern provinces of Minho and Tras os Montes, especially in the wilder portions of the latter. In Spain it is stated by Guirao to remain throughout the summer near Murcia, where it is not abundant; and Dr. A. E. Brehm says that he found it rare during passage, and obtained a single specimen at Masnou, in Catalonia. Mr. Howard Saunders says (Ibis, 1871, p. 206) that he saw a male of this species at Seville in March 1868. In Italy it is somewhat local; but it breeds in Tuscany and the Modenese, whilst in Sicily it is tolerably common, especially during the spring and autumn migrations. Mr. A. B. Brooke met with it not uncommonly in Sardinia; and Mr. C. A. Wright records it from Malta, and writes (Ibis, 1864, p. 59) as follows:—"It arrives and departs about the same time as *M. atricapilla*, but is less common." Schembri, in his Catalogue, has confounded these two birds, as only *M. albicollis* is given, to which is attached the English name "Pied Flycatcher." The late Captain Rowland M. Sperling says that he found it "common in Malta and Corfu during the summer months;" and Lord Lilford writes (Ibis, 1860, p. 230) that he "observed several of these birds in May 1857 near Pelleka, in the island of Corfu." Both Von der Mühle and Lindermayer include it in their lists of the birds found in Greece, the former stating that he only observed it during migration, but thinks it may breed in Rumelia; and the latter says that it is not known to breed in Greece, but is met with in May on passage, and is said not to occur on the islands in the Archipelago. In Southern Germany it appears to be not uncommon in some localities. Dr. Anton Fritsch (J. f. O. 1871, p. 200) says that in Bohemia it is "rarer than *M. atricapilla*, but is occasionally to be found in the markets." Mr. Lokaj kept one alive for over a year. Seidensacher says that he observed it here and there in Styria, at Hartberg, Fehring, Gratz, and Cilli during the breeding-season, and some few bred regularly in the oak-woods near Neustadtl, where he took many nests. It probably occurs on the Lower Danube. Messrs. Elwes and Buckley record it from Turkey; and I have specimens collected near Constantinople. In Southern Russia, according to Professor von

Nordmann, it is tolerably common in summer in the Crimea, especially on the south coast and in the forest of Baïdar, where it nests in the cavities of the old beech-trees, of which the forest principally consists. It arrives at Odessa about the middle of April. Mr. Goebel observed it (J. f. O. 1870, p. 443) in the Uman district, in Southern Russia, but very rarely, though, he says, it breeds there, selecting hollow oaks for the purpose of nidification.

Canon Tristram records it (P. Z. S. 1864, p. 443) as occasionally met with in the wooded districts of Palestine in spring and summer; and it is found tolerably numerous in North-east Africa, where Mr. Cavendish Taylor found it (Ibis, 1867, p. 57) "common at Damietta in April;" and Captain Shelley writes (Ibis, 1871, p. 136) as follows:—"In 1868, towards the beginning of April, we met with many pairs of this bird between Cairo and Benisouéf; but this year I did not see it once south of Benisouéf up to the 10th of May, from which I infer that it does not come down the Nile in its migration." Von Heuglin (Orn. N.O.-Afr. p. 439) says that it is commoner than *M. atricapilla* in March and April during migration in Lower Egypt and Arabia Petræa. He did not observe it further in the interior of Africa. Brehm saw it on the 3rd of May at Lake Menzalah, and about the middle of September at Alexandria. It is stated to occur in North-western Africa; and Major Loche says that it is pretty generally distributed throughout the wooded districts of Algeria; but Mr. J. H. Gurney, jun., in a letter just received, informs me that, though he kept a sharp look out for it when in Algeria, he never saw it there.

To the eastward it has been met with as far as Persia; and De Filippi says that it occurs in the gardens of Tauris.

In its habits, note, and mode of nidification this Flycatcher is said to resemble closely *Muscicapa atricapilla*. Like that species it feeds on insects, and will sit quietly on a bare twig, every now and then darting off and catching a passing fly or other insect. It frequents woodlands, especially beech- and oak-groves, in the hollow portions of which trees it builds its nest. My friend the late Herr E. Seidensacher, of Cilli, frequently took its nest in Styria, and published (Verh. k.-k. zool.-bot. Gesell. 1862, p. 792) some notes on its nidification, from which I extract the following:—"It arrives here (at Cilli) about the middle of May, the males always preceding the females by several days, and very easily recognizable by their song and sprightly movements. In good seasons, as for instance in the early season of 1859, the young were fledged by the 26th May. In 1860 I found four fresh eggs on the 9th May; but in 1860, when we had snow on the 6th and 7th May, and many birds at Neustadtl were killed by the weather, I found the first clutch of eggs on the 20th May. In number the eggs vary from four to seven, and are, even under the microscope, quite unspotted, in colour pale greenish, and weigh from $23\frac{1}{2}$ to $25\frac{1}{2}$ grains, have a rich yellow yelk, and are deposited in a slightly built nest, the outer walls composed of rather coarse bents, and the lining of fine straws, thin paper-like bark, and the covering of plant-stems without any admixture of hair or feathers. The nest is placed in the hollow of an oak or beech; the entrance, always very small, had to be enlarged to allow me to get at the eggs. Usually the hole is from $2\frac{1}{2}$ to 7 feet above the ground. The female sits so close that she may be caught on her eggs; and both parents feed the young so continuously, that the nest is easily to be found when the young are hatched, but not when it contains only eggs; then it is only possible to discover it by watching for the female at about 6 or 7 o'clock A.M., at which time she usually leaves her eggs. As a rule it is useless to watch the male. I have

watched one for hours while it sang cheerily and without interruption as it passed from tree to tree, keeping within a small district, and observed it fly to a hole in a tree, look in, spread its tail, and, after a few moments, slip into the hole; and when I cut the hole larger and examined the interior it contained nothing. This has frequently happened; and I can only surmise that these were unpaired males trying to entice a female and obtain a mate. So soon as the female incubates, the male ceases its song; and when the young are fledged one hears no note from the old birds but the call- or alarm-note, which resembles the word *sszik*. Early in July they leave us, and they only breed here once in the season."

I possess the eggs of this Flycatcher, collected by Mr. Seidensacher in Krain (Carinthia) on the 9th May, 1860. In size and shape, as well as in colour, they closely resemble those of *M. atricapilla*, but, as a rule, are rather paler in general coloration.

The specimen figured, on the same Plate with the male of *M. atricapilla*, is an adult male from Malta, and is the specimen described, this and the female (also described) being in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Ortakeuy, Turkey, September 14th, 1869 (*Robson*). *b*, ♂, *c*, ♀. Olympus, Greece, April 1st, 1870 (*Krüper*). *d*, ♂. Malta (*C. A. Wright*). *e*. Egypt, April 8th, 1865 (*E. C. Taylor*). *f*, ♀. Smyrna, April 25th, 1863 (*Krüper*).

E Mus. H. B. Tristram.

a, ♂. Galizia, Hungary.

E Mus. C. A. Wright.

a, ♂. Meleha, Malta, April 9th, 1870 (*C. A. W.*).



RED-BREASTED FLYCATCHER.

MUSCICAPA PARVA

MUSCICAPA PARVA.

(RED-BREASTED FLYCATCHER.)

Muscicapa parva, Bechst. Gemeinn. Naturg. iv. p. 505 (1795).
Muscicapa lais, Ehr. Symb. Phys. Aves, fol. *t* (1829).
Muscicapa rufogularis, C. L. Brehm, Vög. Deutschl. p. 228 (1831).
Saxicola rubeculoïdes, Sykes, P. Z. S. 1832, p. 92.
Muscicapa minuta, Hornsch. et Schill. Verz. Vög. Pomm. (1837).
Muscicapa rubecula, Swains. in Jard. Nat. Libr. xiii. p. 221 (1838).
Erythrosterna parva (Bechst.), Bp. Comp. List, p. 44 (1838).
Erythrosterna parva ruficollis, A. E. Brehm, Verz. Samml. C. L. Brehm, p. 3 (1866).
Erythrosterna parva rufigularis, A. E. Brehm, ut suprà (1866).

Gobe-mouche rougeâtre, French; *kleiner Fliegenschnäpper*, German.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 9; Kjærb. Orn. Dan. taf. 15; Fritsch, Vög. Eur. taf. 24. fig. 15, and taf. 25. fig. 1; Naumann, Vög. Deutschl. taf. 65. fig. 3; Sundevall, Svensk. Fogl. pl. 68. fig. 4; Gould, B. of Eur. pl. 64; id. B. of G. B. ii. pl. 20.

♂ *ad.* suprà brunneus, pileo, nuchâ et capitis lateribus cærulescenti cinereo-tinctis, supracaudalibus nigro-cinereo lavatis: remigibus saturatè fuscis, secundariis intimis rufescente brunneo marginatis: rectricibus centralibus nigricantibus, reliquis ad basin albis et nigro terminatis: gulâ et pectore rufescenti-aurantiacis: corpore subtùs imo albo, hypochondriis et crisso vix cervino lavatis: rostro brunnescenti-corneo, ad basin mandibulâ pallidiore: pedibus brunneis: iride fuscâ.

♀ *ad.* mari dissimilis, capite dorso concolori nec cinereo tincto, gutture et pectore pallidè rufescenti-cervinis.

Adult Male (Turkey, 10th October). Crown, nape, and sides of the head ashy blue-grey with a brownish tinge; ear-coverts and space below and in front of the eye tinged with white; back, rump, and wing-coverts wood-brown; tail-coverts brown with a dark blackish grey tinge; quills dark brown, the secondaries edged with reddish brown; central rectrices blackish, the outer ones white at the base, and with the terminal third blackish; throat and breast rusty orange, the sides being sharply margined by the blue-grey on the neck; rest of the underparts white, on the flanks and to a slight extent on the under tail-coverts washed with warm buff; beak horn-brown, lighter at the base of the lower mandible; legs dark brown; iris brown. Total length about 4·5 inches, culmen 0·45, gape 0·55, wing 2·65, tail 2·15, tarsus 0·68.

Adult Female (Turkey). Upper parts as in the male, except that the head is brown without any tinge of grey; inner secondaries and larger wing-coverts margined and tipped with pale fulvous-brown, the wings and tail being otherwise as in the male; breast, lower throat, and flanks warm reddish buff, the rest of the underparts being white.

Young Male (Guiken, Asia Minor, 11th May). Resembles the female, but has the underparts white, slightly tinged with buff on the breast, the flank being washed with warm buff.

Nestling (*fide* Schilling, J. f. O. 1853, p. 132). Throat greyish yellow; breast and abdomen spotted with blackish brown; crown, nape, back, and wing-coverts greyish brown with rust-coloured spot; wings and tail as in the adult, except that the outer tail-feathers on each side have less white on them; bill and feet brownish yellow. According to Count C. Wodzicki the nestling plumage is only worn about a month, when it is changed for that of the young bird above described, except that the underparts are more as in the female, warm buff. During the winter the plumage fades; and the next spring it wears that of the young male above described, until August, when it moults, and commences to assume the red breast; but the blue-grey colour on the neck is not assumed until later, when the edges of the feathers commence to wear away. This agrees well with the result of a careful examination of the specimens before me; for the autumn-killed young birds have the underparts much suffused with warm buff, the centre of the abdomen being alone white in some, whereas those killed in the spring have the underparts much whiter, and the plumage worn and faded. One young male shot at Etawah, India, on the 15th March, has the throat and breast washed with yellowish red, the rest of the plumage being as in the other young males obtained in the spring. But on the other hand, old males obtained in October, November, and December appear to be fresh moulted, and have the blue-grey on the head and sides of the neck and the rich red breast most fully developed; and it would appear that when the full plumage is obtained it is worn at all seasons of the year, though of course it is richest when the feathers are fresh moulted. It not unfrequently breeds in the immature dress; and hence the young male was described by Hornschuch and Schilling (*l. c.*) as a distinct species.

The present species of Flycatcher inhabits Central and Southern Europe, rarely passing over to North Africa; and to the eastward it occurs as far as the continent of India, being replaced east of Bengal by a closely allied species (*Muscicapa leucura*).

It has been obtained at least on three occasions in Great Britain; and one other example was seen, but not obtained. The first example was shot on the 24th January, 1863, by Mr. Copeland, of Carwythenack House, in the parish of Constantine, near Falmouth; another was seen, but not obtained, by that gentleman. A second example, a young male, was procured on one of the Scilly Isles in October 1864, by Mr. Augustus Pechell and a nephew of Mr. Rodd's; and on the 5th November, 1865, a third was killed on Tresco Island, in Sicily, by Mr. Pechell and Mr. John Jenkinson, but was so much injured that the sex could not be determined. Full details respecting these occurrences are given by Professor Newton in the edition of Yarrell's 'British Birds,' on which he is now engaged. He also transcribes the following notes given by Mr. Copeland to Mr. Rodd respecting the first example obtained:—"We first observed it on a dead holly-tree; this tree and the ground around the house were its favourite resort. It was particularly active, skimming the grass to within about a foot, then perching itself, darted occasionally with a toss, resting either on a shrub or the wire fencing. There is another in the neighbourhood, for which a vigilant watch will be kept. I saw it a few days back in a plantation which is four hundred yards from my house."

On the continent of Europe the distribution of this Flycatcher is somewhat exceptional. It has not been met with as far north as in Sweden or Norway, though it is tolerably numerous in North Germany, and, according to Kjærbölling, has once occurred in Denmark, a specimen

now preserved in spirits at the Copenhagen Museum having been procured at Söndermarken, near that town. The most northerly occurrence on record in the Baltic is that referred to by the late Professor Sundevall, who says that an old female was obtained by Dr. Krüper on the 24th May, 1855, at sea, off the Landsort's Lighthouse, south of Stockholm. I find no record of its having ever been met with in Finland; but Mr. Sabanäeff informs me that it occurs in Central Russia, breeding in the Governments of Jaroslaf and Moscow, and it has been said to have been met with near St. Petersburg. He did not, however, find it in any part of the Ural he visited. It is to be met with on the island of Rügen and in North Germany, especially in Pomerania, where, though Borggreve speaks of it as being a very rare species, it appears to be by no means so uncommon.

Herr A. von Homeyer writes (J. f. O. 1870, p. 227) that it breeds in the Zarntiner beech-woods (Grimmen, Pomerania) on the Trebel; he observed it near Glogau on passage, and found it breeding at Cudova, in the mountains of Silesia. Bolle obtained it near Berlin; Von Preen records it from Mecklenburg; and Tobias procured it once in May in Oberlausitz.

In Western Germany it appears to be wanting; and it is not recorded from the northern provinces of France, Holland, or Belgium; but Messrs. Jaubert and Barthélemy-Lapommeraye cite two instances of its occurrence in Provence.

According to Mr. Saunders (Ibis, 1871, p. 206), "Seoane states that a specimen was obtained at San Roque in 1857, and passed into his collection;" and a friend who knew the bird thoroughly told him that a single bird used to come to his veranda at Utrera each November, remaining till March. Baron J. W. von Müller states (J. f. O. 1856, p. 226) that it has been met with in Corsica; and it is said to occur as a rare straggler in Switzerland. Count Salvadori gives two instances of its occurrence in Italy; but he doubts its being met with in Sardinia or Sicily.

In Southern Germany it is likewise met with, but is rare. Dr. Fritsch did not appear to have known of any undoubted instances of its occurrence in Bohemia, as he refers merely to a specimen in the Prague Museum, said to have been killed there; but the Ritter von Tschusi-Schmidhofen has shown that it does occur in that country. This gentleman, who met with it in the Böhmerwald, thus placing its occurrence in Bohemia beyond doubt, writes to me as follows:—"In Moravia both Professor Jeitteles and Talsky have seen and obtained specimens; Dilles also observed it in Silesia; and I saw two examples from Gräfenberg, in the Troppauer Museum. There are specimens in the Vienna Museum from the vicinity of that town; and Zelebor observed it on several occasions at Dornbach, near Vienna, where it probably breeds.

"In Upper Austria it has been once obtained near Linz; and Althammer observed it on one occasion in the Tyrol; Von Hueber says that it occurs rarely and singly during passage in Carinthia (Kärnten); and Hanf obtained a single example, a male, in Upper Styria. Seidensacher also found it in Styria breeding, but very rare; and he observed two males in June near Illova, in Croatia. In Upper Hungary it is said by Brusek and Schnablick to be by no means rare in the Gömerer Comitat, where it breeds; and Baldamus states that it breeds in the Banat. Bielz says that it is tolerably common in some parts of Siebenbürgen; and Von Csató obtained several in his garden in Koncza." Messrs. Danford and Harvie-Brown record it from Transylvania, and write (Ibis, 1875, p. 301) as follows:—"Herr Klir, when with us, observed one near Záh; and it is not uncommon during autumn in some parts of the country, especially on

the south-west frontier. Danford saw them at that season on the banks of the Klopotiva, near Réa, among thick bushes; and some specimens in Herr Buda A'dám's collection are from the same locality."

According to Dr. Krüper it occurs during passage in Greece, but is rare. He obtained two at Taygetos in September 1860. It appears to be tolerably numerous in Turkey during passage. Messrs. Alléon and Vian say that it is common on the Bosphorus from the early part of September to the end of October, though at no other season of the year; but I have a specimen shot in the early summer there by Mr. Robson.

It becomes more numerous towards the east, and is common in Southern Russia. Professor von Nordmann says that it breeds numerously in the rugged portions of Abasia, very probably in similar districts in Bessarabia, and possibly near the steppes. The young make their appearance in the gardens of Odessa as early as the end of July, and remain till the end of October. Mr. Ludwig Holtz found it breeding commonly in Southern Russia in woods where the undergrowth is dense. It is not recorded by Ménétriés from the Caucasus, where it probably occurs; and was not met with by Canon Tristram in Palestine; but Hemprich and Ehrenberg obtained it in Arabia. There does not appear to be any record of its occurrence in North-east Africa; but it is stated by Loche to be a rare straggler in Algeria, though he cites no instance of its occurrence.

In Asia it occurs as far east as the Bengal Presidency, where a closely allied species (*Muscicapa leucura*), differing in having the throat only red, and not the breast, is found. Mr. Blanford obtained it between Shiraz and Bushire, and at Dizak in Baluchistan, but says that "it appears to be by no means a common bird in Southern Persia and Baluchistan, though, according to De Filippi, Doria found it abundant in spring in the vicinity of Tehrán." In Sindh there is another well-marked species, *Muscicapa hyperythra* (Cab.), which differs in having the sides of the neck rich velvety black, and which also occurs in Ceylon. Mr. W. E. Brooks has sent me a beautiful specimen of this interesting Flycatcher in full breeding-plumage, obtained by him at Goond, on the Sindh river. The present species, however, appears to be the predominant species in India. Dr. Jerdon gives (Ibis, 1872, p. 128) its range as "all through Southern India, Central India, the N.W. Provinces, and the Punjab." Severtzoff records it as rare during passage in Turkestan; and both Von Schrenck and Dr. Radde state that it is found in Eastern Siberia; but it appears more probable that the species obtained by them was *Muscicapa leucura*, and not true *M. parva*.

In its habits this bird is exceedingly shy and secretive; hence it is very probably overlooked in many localities, and is considered rarer than it really is. Its range is somewhat peculiar; for it would appear that it migrates from Central and Eastern Europe south-eastward to India, not towards Africa unless in very exceptional cases; its occurrence in Algeria, as recorded by Loche, appears open to doubt. It arrives in Southern Europe early in May or late in April, and leaves again in August or September, or sometimes remains as late as October. Mr. A von Homeyer, who found it breeding in Silesia, gives some interesting notes respecting its habits (J. f. O. 1873, p. 221), from which I cull the following information:—"Where the beech and fir are intermixed, the latter trees being in number about half as compared with the former, and where the light and dark green foliage intermixes and is so dense that the rays of the sun

seldom can penetrate to the ground, one finds this species quite at home. Its bell-like metallic-toned song may be heard at some distance, and cannot fail to please and astonish any ornithologist by its sweetness. One can soon discover where the bird is by its pleasant song, which most closely resembles that of the Wood-Warbler, but is richer and more full in tone. Both these birds are found in the same locality, so that one can easily compare their notes; but pleasing as the Wood-Wren's note is, the song of *Muscicapa parva* throws it entirely into the shade. This latter flits about the dead twigs high up amongst the foliage, about forty to sixty feet above the ground. It does not wander over a large extent of ground, but is always in motion. It will catch an insect on the wing, then fly to and perch on a dead twig, utter its song and fly off again—now pick an insect off the trunk of a tree, and then return up to the upper portion of the tree. Here it will again sing, and then fly down to pay a visit to its mate, which is sitting, but is soon off again, always on the move the entire day. It sings most zealously early in the forenoon to about ten o'clock, being quieter up to about three in the afternoon, but in the evening it sings, as joyously as in the early morning, until sunset." Count Wodzicki describes the song of the old male as follows:—"*tivi tivi*, *tivi tivi*, *tivi*, two or three times repeated; and then come tones like the syllables *cico*, *cico*, *tiu*, *tiu*." Young males, he says, seldom utter the last flute-like notes *tiu tiu*, and he has heard red-throated males which have not the full song.

Mr. Ludwig Holtz, who speaks of it (J. f. O. 1873, p. 142) as a common breeding species in South Russia, says that it breeds in woods where the undergrowth is dense, its nest being placed in the hole in a bough usually from eight to ten feet above the ground, the nest itself being constructed of moss (*Hypnum*) and scantily lined with hair. The eggs, which are deposited early in June, vary in number from five to six, sometimes seven. The young are hatched in June, and are carefully tended by their parents. In their first or nestling plumage they resemble young Robins, except that the basal portion of the tail is white, and they are of course much smaller. This dress is retained about a month, most of which time they remain with their parents, and are by them fed with small insects of various kinds.

I possess the eggs of this species, taken at Schlosskampen, which I can best describe by comparing them to dull, closely marked Robins' eggs, except as regards size. They are white, closely marked with dull light reddish buff, or reddish grey, and in size measure from $\frac{26}{40}$ by $\frac{1}{2}$ inch to $\frac{29}{40}$ by $\frac{1}{2}$ inch. One is white, with a faint greenish tinge, rather more sparingly marked than the other specimens with dull reddish.

The specimens figured are an old male in full plumage and a young male in the plumage in which it so closely resembles the female, both specimens being in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *juv.* Silesia (*Dr. Kutter*). *b*, ♂ *ad.*, *c*, ♀ *ad.* Austria (*Baron De Selys-Longchamps*). *d*, ♂ *jun.* Buyukdere valley, Turkey, May 7th, 1869 (*Robson*). *e*, ♂. Guiken, Asia Minor, May 11th, 1869 (*Robson*). *f*, *g*, ♂ *ad.* Maslak, Turkey, October 10th, 1870 (*Robson*). *h*, ♂ *juv.*, *i*, ♀ *ad.* Ortakeuy, Turkey, September 12th, 1871 (*Robson*). *k*, *l*, ♂ *juv.* Ortakeuy, October 3rd, 1871 (*Robson*). *m*, ♂ *jun.* March 15th. *n*, ♂ *ad.*

November. *o, p, ♂ ad.* Etawah, N.W. Provinces, India, December (*W. E. Brooks*). *q, ♀.* Godavery valley, India, January 1871 (*W. T. Blanford*). *r, ♂ ad.* Kurruree, India, November 20th, 1872 (*A. Anderson*). *s, ♀.* Lahore, January 8th, 1868 (*C. H. T. Marshall*).

E Mus. Howard Saunders.

a, ♂, b, ♀. S.E. Europe (*Verreaux*). *c, juv.* Crimea, September 1860.

E Mus. Berol.

a, b, ♂ juv. Arabia, types of *M. lais* (*Hemprich & Ehrenberg*).

E Mus. H. B. Tristram.

a. Hungary. *b.* Near Calcutta, February 1864 (*Beavan*). *c, d, e, ♀, f.* N.W. India (*Dr. Jerdon*). *g, ♂.* Etawah, India, November 1st, 1869 (*W. E. Brooks*).

Section II. OSCINES LATIROSTRES.

Family HIRUNDINIDÆ.

Genus HIRUNDO.

Hirundo, Linnæus, Syst. Nat. i. p. 343 (1766).
Cecropis apud Boie, Isis, 1826, p. 971.
Lillia apud Boie, J. f. Orn. 1858, p. 364.

The genus *Hirundo* is very widely distributed, being represented in all the regions and subregions into which the globe has been divided. Three species only are met with in the Western Palæarctic Region, the range of these birds being given under the separate articles. The Swallows are with us, in Europe, only summer residents, leaving at the approach of the cold weather, when insects become scarce; for they feed exclusively on insects of various kinds, which they capture on the wing. They are extremely swift and active in flight, but, on the other hand, have the feet and legs but indifferently developed, and are therefore unable to walk on the ground, and, comparatively speaking, perch but little, being most frequently seen flying.

Their ordinary note is a twitter, which is sometimes modulated into a sort of song. They build nests of mud, which are placed against the face of a wall, tree, or rock, these nests being carefully lined with feathers; and they deposit several white eggs, either unspotted or else marked with dark-red specks and spots.

Hirundo rustica, the type of the genus, has the bill very short, broad at the base, triangular in form, notched at the tip; nostrils basal, small, linear oblong; gape with a few very slight bristles; wings very long, pointed, the first quill longest; tail very deeply forked, the lateral feathers much elongated; legs and feet very feeble, bare, the tarsus covered with one plate and three inferior scutellæ; claws rather long, moderately curved, laterally grooved, acute.

Progne purpurea (L.), the type of the genus *Progne*, is said to have been obtained in Great Britain; but, there being considerable doubt as to the authenticity of the recorded occurrences, I have deemed it advisable to exclude it, especially as *Progne* is essentially a Nearctic and Neotropical genus.



1. **BARN SWALLOW.**
HIRUNDO RUSTICA.

2 **RED-BELLIED SWALLOW.**
HIRUNDO SAVIGNII.

HIRUNDO SAVIGNII.

(CHESTNUT-BELLIED SWALLOW.)

Hirundo savignii, Steph. in Shaw's Gen. Zool. x. p. 90 (1817).
Hirundo cahirica, Licht. Verz. Doubl. p. 58 (1823).
Hirundo riocouri, Audouin, Expl. Planches, Hist. Nat. de l'Egypte, p. 270 (1825).
Cecropis savignyi (Steph.), Boie, Isis, 1828, p. 316.
Hirundo castanea, Less. Tr. d'Orn. p. 268 (1831).
Hirundo boissoneautii, Temm. Man. d'Orn. iv. p. 652 (1840).
Hirundo rustica, var. *orientalis*, Schl. Rev. Crit. p. xviii. (1844).
Cecropis riocouri (Aud.), Rüpp. Syst. Ueber. p. 22 (1845).
Cecropis boissoneautii (Temm.), A. E. Brehm, J. für Orn. 1853, p. 452.
Hirundo boissoneautii latirostris, A. E. Brehm, Verz. Samml. C. L. Brehm, p. 3 (1866).
Hirundo boissoneautii microrhynchos, A. E. Brehm, ut suprà (1866).
Hirundo boissoneautii minor, A. E. Brehm, ut suprà (1866).
Hirundo rustica, var. *savignyi*, Bree, B. of Eur. p. 170 (1867).

Figuræ notabiles.

Savigny, Ois. de l'Egypte, pl. 4. fig. 4; Susemihl, Vög. Eur. pt. vi. taf. 2; Naumann, Vög. Deutschl. taf. 383. fig. 1; Bree, *l. c.*

Ad. Hirundĭni rusticæ similis, sed corpore subtùs castaneo nec albido: rectricum maculis rufescentibus nec albis.

Adult Male (Egypt). Resembles *Hirundo rustica*, except that the entire underparts below the black collar and the throat above this collar are deep chestnut-red, and the markings on the tail are rusty white, and not pure white as in *Hirundo rustica*. Total length about 7 inches, culmen 0·4, gape 0·55, wing 4·7, tail 4·3, outer rectrices extending 2·25 beyond the central ones, tarsus 0·45.

Adult Female. Resembles the male, but has the underparts, if any thing, rather paler in shade of colour.

As previously stated in the notes on *Hirundo rustica* by Mr. Sharpe and myself (P. Z. S. 1870, p. 248), I can only trace the occurrence of the present species in Palestine and North-east Africa. Messrs. Finsch and Hartlaub go so far even as to unite this species with *Hirundo rustica*—a view which I cannot for a moment indorse; but I think it more than probable that examples of the common Swallow in full spring plumage, having the underparts tinged with rufous, have been mistaken for the present species; and hence it has been recorded as occurring in various parts of Europe, and even, by Mr. Gurney, in Great Britain; but I have as yet failed in finding any example of *Hirundo savignii* from a locality north of the Mediterranean. I cannot positively state that it has never occurred in Europe proper; but I think the balance of evidence is

greatly against such being the case. Mr. C. A. Wright says (Ibis, 1864, p. 57) that "specimens of the variety *Hirundo rustica orientalis* have also been taken on Malta and Gozo;" but doubtless he only refers to specimens of *Hirundo rustica* having the underparts tinged with rusty red. Mr. Howard Saunders writes (Ibis, 1869, p. 396) that specimens of the present species are in the Museum at Catania; but he must have been labouring under a mistake, as Count Salvadori writes (Ucc. d' Italia, p. 52) that he has carefully inquired into the matter, and is assured both by Sig. Aradas, Professor of Zoology and Director of the Museum of Catania, and Professor Doderlein that no specimen of *Hirundo savignii* exists in the Museum at Catania. M. Olph-Galliard states that it occurs on St. Gothard; and Professor Blasius writes that an old male from that locality had the underparts as red as any African specimen; but there appears also to be some doubt about these St.-Gothard examples, as M. Olph-Galliard writes (J. f. O. 1863, p. 389) as follows:—"Je dois à ce propos, rectifier une erreur que j'ai probablement commise en la signalant dans la 'Naumannia' comme visitant régulièrement les hauteurs du St. Gotthard et les environs d'Andermatt. Je crains bien de m'être laissé guider en cela par des renseignements un peu superficiels, et je suis très porté à croire que les exemplaires que l'on m'a montrés comme provenant de cette localité, avaient été capturés dans le Canton du Tessin ou en Italie." Nor can I credit the statement made by Professor Blasius to the effect that it breeds regularly in Western Europe and pairs with *Hirundo rustica*; for in Palestine, where both species are found, Canon Tristram expressly states that they are never found interbreeding. On the whole I cannot but consider very doubtful all the recorded instances of the occurrence of *Hirundo savignii* north of the Mediterranean, and that bright specimens of the common Swallow, having the underparts washed with rusty red, have been mistaken for this species. A fact which goes far towards proving the specific distinctness of *Hirundo savignii* from *Hirundo rustica*, and one confirmed by all ornithologists who have observed it in North-east Africa and Palestine, is that it is a resident, whereas *Hirundo rustica* is a migrant, passing further south to winter, and, as a rule, nesting in more northern localities than those inhabited by *Hirundo savignii*. As above stated, it is more than doubtful if it has ever occurred in Italy or Sicily; and the same appears to be the case as regards Greece, where neither Von der Mühle nor Lindermayer met with it; and I understand from Mr. Seebohm that the birds recorded from Greece as being *H. savignii* are not that species, but merely varieties of *H. rustica* with the underparts more rufous than usual. Messrs. Elwes and Buckley write (Ibis, 1870, p. 200) that the present species is "said by Mr. Robson to be not uncommon about Constantinople;" but amongst the numbers of Swallows I have seen from Turkey I have never yet found one, and do not think that much reliance can be placed on this assertion. Nor does it appear, so far as I can ascertain, to have ever been met with in Southern Russia or Asia Minor; but Canon Tristram, who met with it in Palestine, writes (Ibis, 1867, p. 361) as follows:—"The Oriental Chimney-Swallow remains the whole year, and is found both on the coast, in the maritime plains, and throughout the length of the Jordan valley. No one can observe this bird in the Holy Land without being satisfied of its distinctness from *H. rustica*. It is true we can give no other diagnosis than the difference of coloration on the lower parts, these being chestnut instead of white or brownish white; but of the hundreds of Swallows of both sexes to be seen throughout the winter, not one of the common sort could be detected. There is neither fading nor intensifying of the chestnut

lower plumage at any time of the year. Specimens shot at all seasons are precisely similar. In spring their numbers rapidly increase; and from the middle of March they become distributed over the whole country, the higher as well as the lower grounds, while along with them appear many of our common species. In the higher grounds these perhaps predominate; in the lower certainly the *H. cahirica* [*H. savignii*] is most numerous. I never could detect the two sorts interbreeding, though the nests and eggs are precisely similar." In North-east Africa it is recorded by all the various authors on the ornithology of that country as common and resident. Captain Shelley writes (B. of Egypt, p. 121) that it is "resident and very abundant. It differs from *Hirundo rustica* in not being migratory; and it keeps more exclusively to the neighbourhood of houses, usually selecting the inside of some native mud hut for its nest, which it begins to construct in February." Von Heuglin states that it breeds from January to April in Egypt, where it is resident, and is not met with to the south of that country. It has been recorded by various authors from West Africa; but there appears to be considerable doubt as to whether the true *Hirundo savignii* ever occurs there.

In its habits the present species does not differ from *Hirundo rustica*; and its mode of nidification likewise closely resembles that of the common Swallow. I do not possess its eggs; but Canon Tristram states (*l. c.*) that they and the nest are precisely similar to those of *Hirundo rustica*. In Palestine, he writes, "having no chimneys provided for them, rafters of outhouses, where such can be found, but especially ledges in caves, are the favourite nesting-places; and I took five nests attached to the little projecting stones under the vaulted roof of a well in constant use, about two feet from the ground, and built in a row. Convenient situations must have been scarce there (it was near Kedesh); for we had to stoop under the roof to draw water, and almost touched the nests with our heads as we withdrew."

The synonymy of the present species appears to have been not a little entangled. Mr. G. R. Gray (Gen. of Birds, i. p. 57) refers to it as *Hirundo savignii*, Leach; but I have failed to discover if or where Leach ever described it under that title, and think that there must be some error on the part of Mr. Gray. Mr. Sharpe (P. Z. S. 1870, p. 305) calls it *Hirundo riocouri*, Savigny, stating that it was originally described by Savigny in 1813; but here appears also to be an error, as the description to which he refers under that date (Descr. de l'Egypte, p. 270) was not published until 1825, and the author was not Savigny, but Audouin, who undertook the letterpress after it was relinquished by Savigny. The plate on which this bird was figured by Savigny appears to have been issued about 1809; but it was not lettered, and no description was then published of the bird. The first published description seems to be that of Stephens (*l. c.*) in 1817; and this gentleman observed that as a figure of the bird only had been received without any descriptive letterpress, he considered it best to describe it, naming it after M. Savigny.

The specimen figured, on the same Plate with *Hirundo rustica*, is the one above described, and is in my collection.

In the preparation of the above article I have examined the following specimens:—

4

E Mus. H. E. Dresser.

a, ♂. Egypt (*Capt. Shelley*). *b*. Egypt (*Cooke*). *c*. Egypt (*Hempr. & Ehrenb.*). *d*. Egypt (*Verreaux*). *e*. Cairo, December 9th, 1862 (*S. S. Allen*).

E Mus. G. E. Shelley.

a, ♀. Egypt, March 13th, 1868 (*G. E. S.*). *b*, ♀, *c*, ♂. Egypt, March 24th, 1871 (*G. E. S.*).

E Mus. H. B. Tristram.

a. Caiffa, December 12th, 1863. *b*, ♀. Plain of Esdraelon, December 16th, 1863. *c*, ♂. Tiberias, February 27th, 1864 (*H. B. T.*). *d*. Egypt, January 1860 (*W. C. P. Medlycott*).

E Mus. Howard Saunders.

a. Cairo.

HIRUNDO RUSTICA.

(SWALLOW.)

Hirundo domestica, Brisson, Orn. ii. p. 486 (1760).
Hirundo rustica, Linn. Syst. Nat. i. p. 343, "Europe" (1766).
Hirondelle d'Antigue, Sonn. Voy. Nouv. Guin. p. 118, pl. 76, "Antigua" (1776).
Hirondelle de cheminée, Montb. Hist. Nat. Ois. vi. p. 591 (1779).
Hirondelle d'Antigue à gorge couleur de rouille, Montb. tom. cit. p. 607 (1779, ex Sonn.).
Hirundo gutturalis, Scop. Delic. Floræ et Faun. Insubr. ii. p. 96, "Antigua" (1786, ex Sonn.).
Hirundo panayana, Gm. Syst. Nat. p. 1018, "Antigua" (1788, ex Sonn.).
Hirundo domestica, Pall. Zoogr. Rosso-As. i. p. 529, "Russia & Siberia" (1811).
Cecropis rustica (L.), Boie, Isis, 1826, p. 971.
Hirundo jewan, Sykes, Proc. Zool. Soc. 1832, p. 83, "Dukhun."
Hirundo javanica, Sparrm., Bp. Consp. Gen. Av. i. p. 338, "India, China, Malaiasia, Philipp. Isl." (1850, partim).
Cecropis stabulorum, C. L. Brehm, Vogelfang, p. 47, "Hungary & Carinthia" (1855).
Cecropis pagorum, C. L. Brehm, op. cit. p. 47, "Central Germany" (1855).
Hirundo cahirica, Licht., Hartl. Syst. Orn. Westafr. p. 26, "Congo" (1857, nec Licht.).
Hirundo boissoneautii, Temm., Krüper, J. f. O. 1860, p. 281, "Missolonghi" (nec Temm.).
Hirundo rustica orientalis, Wright, Ibis, 1864, p. 57, "Malta" (nec Schlegel).
Hirundo fretensis, Gould, Handb. B. Austral. i. p. 110, "N. shore of Australia" (1865).
Hirundo riocouri, Aud., Gurney, jun., Ibis, 1866, p. 423, "Teesmouth, England" (nec Aud.).

Swallow, *Barn-Swallow*, *Chimney-Swallow*, English; *Gobhlan-gaoithe*, Gaelic; *Hirondelle de cheminée*, French; *Andorinha*, Portuguese; *Golondrina*, Spanish; *Oroneta*, Valencian; *Rondine*, Italian; *Huttafa*, *Hauiefa*, Maltese; *Zwaluw*, Dutch; *Forstu-svale*, *Hus-svale*, Danish; *Sveala*, Færoese; *Svale*, Norwegian; *Ladusvala*, Swedish; *Latopääsky*, *Pääskynen*, Finnish.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 543. fig. 1; Werner, Atlas, *Chélidons*, pl. 1; Kjærb. Orn. Dan. xiv.; Fritsch, Vög. Eur. taf. 23. fig. 4; Sundevall, Sv. Fogl. taf. 17. fig. 5; Naumann, Vög. Deutschl. taf. 145. fig. 1; Gould, B. of Eur. pl. 54; id. B. of G. B. ii. pl. 5; Schlegel, Vog. Nederl. pl. 57; Roux, Orn. Prov. pl. 141.

♂ *ad.* fronte et gulâ pulchrè castaneis, capite et corpore suprà cum scapularibus et tectricibus alarum nigricanti-chalybeis: remigibus et rectricibus nigricantibus cæruleo vel viridi-chalybeo nitentibus: rectricibus omnibus, duabus centralibus exceptis, in pogonio interno maculâ albâ versus apicem notatis: capitis lateribus et collo antico nigris: pectore, abdomine et crisso albis rufescente levissime tinctis: caudâ valdè forficatâ: rostro et pedibus nigris: iride fuscâ.

♀ *ad.* mari similis sed sordidior et caudâ minus forficatâ, rectricibus extimis non tam elongatis.

Adult Male (Pagham, Sussex, 23rd April). Forehead and upper part of the throat rich chestnut-red; head, neck, a broad band covering the lower throat and upper breast, and the upper parts of the body, including the wing-coverts and scapulars, deep steely blue; quills black, glossed with purplish blue or bottle-green; tail similarly coloured, all except the two central rectrices having a large white patch towards the tip of the inner web; underparts white, with a very faint blush of reddish, which is most perceptible on the flanks and under tail-coverts; bill and feet black; iris brown. Total length about 8 inches, culmen 0·4, gape 0·6, wing 4·8, tail 4·7, lateral rectrices extending about 2·75 beyond the central one, tarsus 0·45.

Adult Female. Resembles the male, but is, if any thing, a trifle duller in colour, and the outer rectrices are somewhat shorter.

Nestling (Highgate, 22nd June). Frontlet (extending backwards over the eye) and throat very pale sienna; space between the bill and the eye, as well as the cheeks, black; entire upper surface dusky steel-blue; quills blackish, edged externally with greenish blue, as also the tail, which is almost square, the spots on the latter white, tinged faintly with buff; a band extending across the lower part of the throat and chest black, with scarcely any blue reflection; rest of the under surface of the body white, tinged with delicate buff; flanks dusky; bill blackish, yellow along the gape; feet dark brown.

Obs. In 1870 (P. Z. S. 1870, pp. 244–249) Mr. Sharpe and myself entered fully into the question of the changes of plumage undergone by the Common Swallow between the nesting-plumage and the fully adult dress, and described eleven specimens in various stages. These descriptions I will not reproduce here, but will merely state that when the young bird has left Europe and arrived at its winter quarters the pale sienna frontlet has disappeared, and the throat has faded to white with a faint rufous tinge or pure white, the breast-band is pale brown, and the upper surface of the body is dull brown washed with blue, the entire head being brown. From this plumage it gradually moults before it leaves its winter quarters into the fully adult dress; and I have examined specimens from South Africa which have the brown on the head and upper parts intermixed with freshly moulted steel-blue feathers, and the throat and frontlet are becoming rufous. One of the most interesting of these birds in change of plumage is the one we described as specimen no. 5, and is still in my collection.

In the spring the Swallow, when it first arrives in Europe, has the underparts suffused with warm buff, and in this stage of plumage it has been not unfrequently mistaken for *H. savignii*.

Obs. At the first glance it would appear as if our European Swallow were quite distinct from the forms found in Asia and America; but from careful examination of a large series from various localities it would appear as if it gradually passed from true *Hirundo rustica*, having the broad strongly marked pectoral band, into *Hirundo horreorum*, which has the pectoral band only on the sides, the centre being interrupted by chestnut, and the underparts are much redder than in our European bird. I have placed a large series of European birds from almost every part of Europe by the side of an equal number of American Swallows from Mr. Salvin's collection; and the differences appear quite constant; but a series of Asiatic examples lent to me by Lord Walden exhibit almost every gradation between the two. It will therefore be necessary to make a few remarks respecting these birds.

The series from European and African localities I may dismiss after saying that they all agree in having the dark pectoral band clearly and fully developed. One or two have a brown feather or two in this band; but these appear to be scarcely fully adult specimens.

Taking first specimens from India, I find in the series from Lord Walden's collection four examples from

Maunbhoom, which I unhesitatingly put down as *H. rustica*; for they have the band across the chest clearly developed, though not so broad as in European birds, and in two it is slightly interrupted by reddish feathers. Two specimens from Darjeeling are labelled *H. tytleri*; but these I should not separate from our bird, as the pectoral band is fully developed; and though the underparts are very rufescent, still they are not more so than is often observable in our bird in spring, and I can match Lord Walden's bird to a shade with some of my European ones. His Lordship informs me that he possesses much redder examples, which he cannot at the moment find; and this I can well believe, as I possess one from the Khasi Hills, obtained by the late Dr. Jerdon, which closely resembles examples from Lake Baikal and North America in having the band on the breast interrupted in the middle; and the underparts are very rufous, nearly as much so as pale examples of *Hirundo savignii*.

A single specimen from Ceylon, in winter plumage, does not in the least differ from our bird, and is remarkable for having the underparts below the breast-band very white.

There is also a single bird from Assam which is remarkable in having the red on the throat very much developed, extending over the portion where the dark band usually passes in the middle of the chest, the band being merely indicated on the sides of the chest; and the rest of the underparts are white. It resembles *H. horreorum*, except that the underparts are much whiter, and it is a smaller bird, being scarcely larger than *H. javanica*; but it has the underparts whiter than in that species, and the tail is much more deeply forked.

From the Andaman Islands there are three specimens, all of which are referable to *Hirundo rustica*, and differ imperceptibly from European examples.

Three birds from Java are also identical with European specimens, except that one has the red on the throat much extended, and the band across the breast comparatively narrow. Specimens from Celebes also resemble this last-named bird in having the band across the breast narrow, and the rufous on the throat extended over a larger area than in the average of European birds, from which they do not otherwise differ. An example from Morty Island, in not quite mature plumage, resembles these, but appears as if, in mature dress, it would have the breast-band broader.

From Malacca there are in the series lent to me by Lord Walden three specimens of *Hirundo rustica* which, though they appear a trifle less in size, are otherwise similar to European birds; but besides these there are two other examples from Malacca, and two collected by Dr. A. B. Meyer in the Togian Islands, which are certainly distinct from *Hirundo rustica*, and are, I consider, true *Hirundo javanica*. These birds are smaller than *Hirundo rustica*, have no band across the breast, the throat and upper breast being rusty red with an orange tinge, the sides of the breast dark sooty grey, and the underparts dull white, with slight striations, which are scarcely distinguishable in some specimens; under tail-coverts sooty grey, tipped with white; the upper parts are as in *H. rustica*, but the red frontal patch is very large. They measure—culmen 0·4, wing 0·4, tail 2·1, tarsus 0·37. None of these specimens have the lateral rectrices much elongated as in *H. rustica*.

In the Strickland Collection at Cambridge is a specimen from the Philippines, from which islands *H. gutturalis* was described. This bird, which I have carefully examined and compared, is certainly nothing but *Hirundo rustica* in the plumage of the first winter, similar to that above described from the Cape of Good Hope.

I possess two specimens from Lake Baikal, one of which is precisely similar to examples from Dueñas, in Central America, in Mr. Salvin's collection, and one from Alaska in the same collection, whereas the other has the band across the breast nearly meeting, instead of being interrupted by red; and both have the underparts very rufous, almost more so than the average of American specimens, but not nearly so dark as in *Hirundo savignii*. These specimens very closely resemble one from the Khasi hills, determined by Dr. Jerdon as *H. tytleri*.

In Lord Walden's collection are two specimens from China and one from Japan, which have the band across

the breast as in American examples, but somewhat inclining to connect; but they differ from these latter in having the underparts very white, and with some slight hesitation I refer them to *H. rustica*.

Although I have had the opportunity of examining a large series of specimens of *Hirundo horreorum* in Mr. Salvin's collection, I will not refer further to this species beyond saying that it appears to me that this form alone inhabits both North and South America. Professor Baird separates *Hirundo erythrogaster* from Peru; but an examination of Mr. Salvin's specimens confirms me in the opinion that this supposed species is merely immature *H. horreorum* in winter dress.

The conclusion at which I arrive, after having examined the above series, is, that throughout Europe and Africa the ordinary form of *Hirundo rustica* is found, there being in North-east Africa and Palestine a distinct resident species (*H. savignii*) differing in having the underparts rich chestnut-red. In Asia the Swallow gradually approaches the American form towards the east, until in Eastern Siberia one finds true *H. horreorum*; but otherwise the common Swallow of Asia is *H. rustica*, excepting that perhaps *H. tytleri* may possibly be a good species, though, judging from the specimens I have examined, it appears to me probable that this title will sink into a synonym of *H. horreorum*. Unfortunately I have had only one or two examples of *H. tytleri* to examine, and am therefore unable to decide this question; but should it prove from an examination of a series of specimens that it does not have the dark band continuous across the chest, there will then be no character by which it can be distinguished from the American form.

The range of our common European Swallow is much more extensive than has generally been supposed; for it is met with throughout Europe, Africa, and Asia, being, however, to some extent replaced in Eastern Asia by the closely allied American Swallow, *Hirundo horreorum*, which I cannot but treat as a distinct species, though it does not differ very widely from *Hirundo rustica*, being more rufous on the under surface of the body, and the band across the breast is not, as in the latter species, clearly defined, but is interrupted in the centre by rusty red.

In Great Britain it is a numerous summer visitant, and occurs up as high as the northern parts of Scotland, but does not appear to breed in the Outer Hebrides. Mr. Cecil Smith informs me that it is as common on the Channel Islands as on the mainland; and it is stated to be as numerous in Ireland as elsewhere. Mr. Robert Gray writes (B. of W. of Scotl. p. 205), "it does not appear to remain to breed in the Outer Hebrides; but specimens are seen there every year. I have observed it in North Uist, Benbecula, and South Uist; and Captain Feilden informs me that he saw it in Barra on the 8th May, 1870. Mr. Harvie-Brown also observed it near Lochmaddy on the same day. Its visits to the remoter islands are generally made early in the season, and can only be looked upon as the results of a restless flight before the birds settle in their breeding-quarters. In the Inner Hebrides its stay extends over the summer; it is common in Mull and Iona, in Skye, Rum, Tyree, Coll, and probably all the smaller isles."

It is not known to occur in Greenland, and is only a rare straggler in Iceland, never remaining to breed; and, according to Captain Feilden, it appears in the Færoes in considerable numbers in May, but has never been observed nesting there. It is common in Scandinavia; and Mr. Collett says that it breeds throughout Norway up to about the arctic circle, above which it is seen as a straggler, but does not appear to breed. However, Nordvi states that it bred at Vadsö, in East Finmark, in 1866, and Esmark records it as having nested at Svanevig, on the Pasvig Elv. In Sweden it is a common summer visitant, arriving about the 22nd or 26th April, or sometimes not till early in May, and leaving early in October. It breeds commonly through-

out the country, and is found as far north as Alten in 70° N. lat., and at Vardö in 70½° N. lat., but does not breed there. It is also said to have been seen at Hammerfest. South of these places, Professor Sundevall says, it is not found in Lapland until in about 68½° N. lat., at Enontekis, Karesuando, and Ivalajoki, below which it is extremely common.

In Finland I found it numerous throughout the country; in Russia it is common and generally distributed as far north at least as Archangel; and Sabanäeff informs me that it is found throughout the Ural. In Poland, the Baltic Provinces, and North Germany, as well as in Denmark, it is a common summer visitant; and I am indebted to Mr. A. Benzon, of Copenhagen, for the following notes respecting its occurrence in this last-named country:—"The common Danish names for the Swallow are 'Forstusvale' and 'Hus-svale.' The name 'Sortbag' (black-back) in contradistinction to 'Hvidbag' (whiteback) as the name of the Martin, is seldom used, as are also the various names derived from the places where it builds its nest, such as 'Ladesvale,' 'Staldsvale;' and the name 'Skorstenssvale' used by some authors, Kjærbölling amongst them, I consider to arise from a confusion with the House-Martin. Here in Denmark we look on the Swallow as the harbinger of spring; for it is the first of this group to arrive, probably because it is molested by no one, not even by the lower classes. It usually arrives late in April, and leaves again about the end of September; but the times both of its arrival and departure vary according to the season. I have never known them to arrive here in flocks, but they drop in by twos and threes, whereas in the autumn they collect in flocks before their departure. I have never observed them roost on telegraph-wires or trees, whereas during the daytime they often collect in large flocks on the former. I expect that those which have bred in the neighbourhood collect together on the telegraph-wires, &c., whereas those which merely pass through and remain to roost pass the night amongst the reeds in vast numbers. We have carefully collected data respecting the arrival of the Swallow in Denmark from 1779 to 1788 inclusive, and again from 1797 to 1840 inclusive, and from the latter date to the present (*c. f.* Vidensk. Midd. fra Naturh. Foren. Kjöbenh. 1854, p. 1, 'Vaarens Komme,' by P. Pedersen). From this it appears that it requires about seventeen years' observation to arrive at the true average date of its arrival, and the date of arrival at one and the same place varies as much as twenty-three days. Take, for instance, Boserup, about twenty English miles distant from Copenhagen; we find the earliest date of arrival the 13th April, and the latest about the 6th May, the average date being the 25th April. At Pind Mölle, near Svendberg, in Fyen, the first date of arrival was the 16th April, and the latest the 9th of May, the average being the 27th April, this being the result of thirty-three years' observation. At Vedersö, near Ringkjöbing, on the west coast of Jutland, the earliest date of arrival was the 26th April, and the latest the 19th May, the average date being the 8th May. In these three instances the variation is as much as twenty-three days; but in some localities it is less, even as little as nine days, whereas again in others it is twenty days. The variation in the date of arrival at various parts of Denmark in the same season is as much as fourteen days. The House-Martin arrives in Belgium about twenty-one days earlier than in Denmark; and there is about the same difference in the date of the arrival of this species." In France, Portugal, and Spain it is, as elsewhere, a common summer visitant, but is also stated to occur in the last-named country in January; and probably some stragglers may remain there over winter. Colonel Irby states that it usually arrives in Spain early in February, and leaves in November; and Mr. Howard

Saunders writes (Ibis, 1871, p. 205) as follows:—"I was informed that the usual date of the appearance of the Swallow at Malaga was 25th January; but I did not actually observe it till 4th February in 1868 (an exceptionally cold year). I found many broods hatched by 16th April in the herdsmen's huts south of Seville." Throughout the whole of Southern Europe it is to be met with during the summer, arriving in March or April. Savi, quoting the Italian proverb, "Per San Benedetto la rondine è sul tetto," remarks that it is a fact that by about the 21st March some Swallows have arrived, but the main body do not appear before April. It is numerous in Sicily and Sardinia; and Mr. C. A. Wright, referring to its occurrence at Malta, says (Ibis, 1864, p. 57) that it "arrives in great numbers early in March, and may be seen in town and country till May. At the end of August, on its return southward, it again makes its appearance, and is plentifully spread over the island till October." In Greece and Turkey it is found numerously during the summer, but does not appear, according to Lindermayer, to be so numerous as the House-Martin in Greece. In Southern Russia, where, as elsewhere, it breeds commonly, it arrives in April. In Palestine it meets with its near ally *Hirundo savignii*, which, however, is a resident, whereas the present species is a migrant, remaining only during the breeding-season, and passing south to winter. In North-east Africa the present species is seen in summer and at the two seasons of passage; and stragglers may also remain there over winter; for Captain Shelley says that he saw an immature bird in the Nile delta on the 25th February. In North-west Africa it breeds, but does not, as a rule, remain over the winter; and probably those few that are observed during the winter season are birds of late broods which have been hatched in the north of Europe, and have therefore arrived very late in North Africa. Canon Tristram, speaking of these birds observed in Algeria in the winter, writes (Ibis, 1859, p. 435) as follows:—"A few pairs of Swallows remained all the winter in each oasis; but none of those observed were in mature plumage, and I therefore presume that it is only the younger and weaker birds who stay behind. The Arabs informed me that for one Swallow they have in winter they have twenty in summer, and that they usually retire about the end of November, returning in February, though in the beginning of that month I saw myriads on the wing at Biskra, which must have remained for some time in that neighbourhood, as they did not reappear in any considerable numbers in Tunis till the beginning of March. But throughout the whole winter a few were to be seen wherever there was water or marsh." Mr. Taczanowski saw a single specimen at Lake Fezzara in December, and adds that the main body arrived in March, and that by about the beginning of April those birds which remained to breed had taken up their nesting-quarters and commenced building. In the winter season the Swallow is found throughout Africa as far south as the Cape of Good Hope, and has been recorded from the Gold Coast, the Gaboon, Camma river, Damara Land, and Cape colony. Governor Ussher states (Ibis, 1874, p. 62) that he shot birds in incomplete plumage on Connors Hill, near Cape coast, in February and March, and adds that it leaves the coast about April, as he never obtained any after the first of May. Mr. E. L. Layard speaks of it (B. of S. Afr. p. 53) as being a common species in the Cape colony during winter, but none remain there to breed, all leaving for the north late in March or early in April; and he remarks that they do not collect in flocks previous to departure, but migrate singly; but Mr. Ayres, who says (Ibis, 1863, p. 321) that they arrive in Natal in great numbers in November, states that they "*congregate* and leave again in March and April."

Dr. Carl Bolle writes that he observed a flock at Canaria, in the Canaries, in May, but adds that they do not breed there; Mr. Godman does not record it from Madeira or the Azores; but I possess a specimen caught off Madeira during a storm on board the Hamburg vessel 'Augustine,' and sent to me by Dr. Otto Finsch.

To the eastward the common Swallow is found as far as Japan; but as one moves eastward it will be observable that there is a gradual tendency in specimens to diverge from the typical European form towards *Hirundo horreorum*, the species which inhabits the Nearctic region; and in Eastern Siberia, near Lake Baikal, specimens of this latter form are found in no way differing from typical American examples. The present species is stated by De Filippi to be less common than in Europe. Mr. Blanford says that it is common throughout Persia in the summer, and breeds at heights from about 4000 feet to about 8000. At Kalagán and Jálk the birds appeared to be arriving in March; and on dissection it was evident that they were commencing to breed. Dr. Henderson met with it in Yarkand. He writes that it "was found in great abundance in Cashmir in June, where it was breeding; and in the plains of Yarkand it was common all the way from Sanju to the city. At Oo Tográk, in August, they were collecting in flocks and perching in vast numbers on the mulberry-trees, probably preparatory to migrating, because on the return of the expedition to the same locality in September not one was to be seen. The Yarkandis, who call the bird 'Kaldergoch,' said that it disappeared entirely in the cold season." According to Jerdon (B. of India, i. p. 158), it is found throughout the entire Indian continent and Ceylon during the winter season; but he does not know that it breeds there. It extends, he adds, "through Assam, Burmah, and Malayana to the islands, and also to China and the Philippines; in Upper Burmah it comes in early in July."

I have examined specimens from Java, Malacca, the Philippines, and the Andamans; and judging from Mr. Gould's description of *Hirundo fretensis*, from the north shore of Australia, I gather that the bird obtained was true *H. rustica*. The present species, in a slightly modified form, also occurs in China and Japan; but the bird found in Eastern Siberia is, so far as I can ascertain, true *Hirundo horreorum*.

Throughout Europe generally the Swallow is merely a migrant, arriving as one of the first harbingers of summer, and leaving us before the cold weather sets in. It is now unnecessary to refute the old fable so current amongst our forefathers, that the Swallows hibernate during the winter season, as it has long been satisfactorily proved that such is not the case; but even in the present century it was found necessary to write long essays to prove that they migrate to more genial climes instead of passing the winter in a state of torpidity in the mud, or in old caves and hollow trees. Mr. Benzon informs me that in old prescriptions one sometimes finds reference made to *aqua hirundinum*, a sort of essence of water and Swallows, which in olden times appears to have been considered a sovereign remedy for many of the ills that man is heir to.

Being entirely insectivorous, the Swallow is one of our most harmless and useful birds; and in most parts of Europe it is protected by the peasantry, who object to it being molested; and it would be well if this were everywhere the case. Swift on the wing and exceedingly agile and graceful, it glides with the greatest ease through the air, the tail being usually carried but little expanded and only spread out to its full extent when a sudden turn is made, generally to catch a passing insect. During clear fine weather it is usually seen flying at a great altitude; but in

damp dull weather it skims close over the ground, following every irregularity in it in search of its insect prey. Their great power of flight enables them to persecute and put to flight most of the birds of prey which may happen to intrude on their domain; and on the appearance of any such intruder they all collect and join in driving him away, in which they generally succeed.

Soon after the arrival of the Swallow at its summer quarters it commences nidification. As a rule, if undisturbed, it takes possession of its old nesting-place; and if some favourite nook exists, its nest may repeatedly be destroyed before it will accept notice to quit and take up its residence elsewhere. Usually some convenient place under the eaves of a roof, or on the beam of an outhouse, or in any shed where ingress and egress are easy, is selected; or it will place its nest down the shaft of an old well, on the face of a rock or quarry, or not unfrequently in a chimney, the latter place being doubtless selected for the sake of warmth. The nest is open at the top, and resembles half a cup; it consists of a tough shell composed of mud or dirt carefully worked together with pieces of straw until it becomes a tough, strong structure; within this crust straws are carelessly disposed; and the inner bed is composed of a quantity of soft feathers. I have never watched to observe how long it takes the bird to finish its nest; but Mr. Benzon informs me that he finds that a week is about the time employed in its construction. The shape of the nest varies somewhat according to the place where it is built: if placed on a beam it is nearly circular; but when in a corner it is fitted in so that the front wall does not even make a half section of a circle. This bird has an especial predilection for the vicinity of inhabited places, and especially in country places, where amongst the peasantry it is a welcome guest, and it is considered fortunate if it builds on the house. It will place its nest in places where people are passing and repassing every moment of the day. Mr. Benzon tells me that at Stubbekjöbing, in Denmark, his birthplace, he observed a pair of Swallows which built year after year in a shop which was almost all day long full of peasants. He also says that in a cowhouse in the same village, where the beams were especially suited for nesting-places for the Swallows, he counted in July 1871 as many as sixty odd nests, and adds that the Swallows kept the cowhouse entirely free from gnats, flies, and other insects, thus amply paying rent for their quarters. Not unfrequently when the Swallow has carefully finished its nest it is ousted by some stronger bird, who takes possession, and forces the peaceful Swallow to construct a fresh one. I have known one or two instances where Sparrows have taken possession and turned out the rightful owners; and Mr. Benzon informs me of two instances where the Spotted Flycatcher (*Muscicapa grisola*) has turned out the Swallows as soon as the latter had finished their nest, and taken forcible possession of the comfortable tenement.

Usually the Swallow breeds twice in the season, the first eggs being deposited in May, and the second lot in July, or occasionally as late as the early part of August. Strictly a monogamist, it would appear that Swallows pair for life; but should by any chance one of the pair be killed, the survivor soon finds another mate. The number of eggs usually deposited is four or five, seldom six; and the eggs are white, sparingly marked with purplish grey underlying shell-markings, and with more profusely scattered surface-spots and small blotches, which are generally most numerous at the larger end. Specimens in my collection, from various parts of Europe, do not differ much *inter se*, and in size measure from $\frac{29}{40}$ by $\frac{21}{40}$ inch to $\frac{32}{40}$ by $\frac{23}{40}$ inch.

Mr. Benzon informs me that the earliest-taken eggs he possesses were obtained on the 8th

of May in Denmark, and the latest were taken on the 1st of August. He gives the measurements of those in his collection as from 20 by 12·5 millimetres to 21·5 by 14·5 millims., one very small egg measuring only 7·5 by 5 millims.

It is rather interesting to note the date of arrival of the Swallow in spring in the various parts of Europe. It arrives in Spain early in February, passes Malta early in March, is first seen in Italy about the 21st of March, is seen in Palestine about the middle of March, and is first observed on the northern shores of the Black Sea in April. In Northern Europe it arrives in the north of France and Belgium from the 5th to the 15th of April, and in the south of England about the same time, but does not appear in Scotland before the end of that month. In Denmark it appears about twenty days later than in Belgium; in Southern Sweden the first are seen from the 22nd to the 26th of April, but occasionally not till the first week in May. It does not appear at Rörås, Nilsson says, till the 20th of May, and is not seen on the Dovrefjeld until the 1st of June.

The specimen figured, on the same Plate with *Hirundo savignii*, and described, is an adult British-killed specimen in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Waltham, August 1867 (*Sharpe*). *b*, ♂. Pagham, April 1870 (*Sharpe*). *c*, *juv.* Pagham, August 1869 (*Sharpe*). *d*, ♀, *e*, ♂. Hampstead, May 1870 (*Davy*). *f*, ♂. Hampstead, June 1869 (*Davy*). *g*, ♂. Highgate, September 1869 (*Davy*). *h*, *juv.*, *i*, *juv.*, *k*, *juv.* Highgate, June (*Davy*). *l*, ♂, *m*, ♀. Cookham, April 19th, 1869 (*Briggs*). *n*, ♂. Cookham, May 1865 (*Sharpe*). *o*, ♂. Cookham, May 1867 (*Briggs*). *p*, ♂. Cookham, June 1867 (*Briggs*). *q*, ♂, *r*, ♀. Cookham, June 1869 (*Sharpe*). *s*, ♂. Cookham, July 1869 (*Sharpe*). *t*, ♂. Cookham, September 1866 (*Briggs*). *u*, ♂. Cookham, September 1867 (*Sharpe*). *v*, ♂, *w*, ♂. Piedmont, April 1870 (*Salvadori*). *x*, ♂. Piedmont, March 1870 (*Salvadori*). *y*, ♂. Piedmont, 1870 (*Salvadori*). *z*, ♂. S.E. Ural, August 22nd, 1872 (*Meves*). *aa*, ♂. Off Madeira (*A. Zietz*). *ab*. Tangiers, 1874 (*L. H. Irby*). *ac*. Egypt, February 4th, 1870 (*Shelley*). *ad*. South Africa (*E. L. Layard*). *ae*. Cape colony (*F. R. Surtees*).

E Mus. Lord Walden.

a, ♀. Hampstead, October 1st, 1868 (*Davy*). *b*, ♂. Asia Minor, April 23rd, 1865 (*T. Robson*). *c*, ♀. Asia Minor, May 14th, 1865 (*T. Robson*). *d*, ♂. Red Sea, November 2nd, 1870. *e*. Dakar, Senegal. *f*, ♀. Knysna, December 31st, 1865. *g*, *h*. Maunbhoom, February 1865 (*R. C. Beavan*). *i*, ♀. Maunbhoom, December 20th, 1864 (*R. C. Beavan*). *j*, ♀. Maunbhoom, December 17th, 1864 (*R. C. Beavan*). *k*. Maunbhoom, December 20th, 1864 (*R. C. Beavan*). *l*. Darjeeling. *m*. Darjeeling. *n*. Darjeeling. *o*, ♀. Ceylon, December 28th, 1865 (*S. Chapman*). *p*. Andaman (*R. G. Wardlaw Ramsay*). *q*, ♂. Andaman, February 10th, 1873 (*R. G. Wardlaw Ramsay*). *r*. Andaman (*R. G. Wardlaw Ramsay*). *s*, *t*, *u*. Java. *v*, *w*, *x*. Celebes. *y*, ♂. Malacca, 1864. *z*, ♂. Morty Island, 1861 (*A. R. Wallace*). *aa*. Malacca, 1864. *ab*. Malacca, 1864. *ac*, *ad*. China. *ae*. Hakodadi, Japan (*Whitely*).

E Mus. Howard Saunders.

a, ♂. Granada, March 1871. *b*, ♀. Granada, June 1871. *c*, ♂. Valencia, summer 1871. *d*, ♂. Tangier.



RED-RUMPED SWALLOW.

HIRUNDO RUFULA

HIRUNDO RUFULA.

(RED-RUMPED SWALLOW.)

Hirundo alpestris, Pall. Reise, ii. p. 709 (1773, partim).
Hirundo daurica, Savi, Orn. Tosc. iii. p. 201 (1831, nec Lath.).
Hirundo alpestris, Bp. Faun. Ital. Ucc. Introd. fol. xxx (1832, nec Pallas).
Hirundo rufula, Temm. Man. d'Orn. iii. p. 298 (1835, syn. excl.).
Hirundo capensis, Durazzo, Ucc. Liguri, p. 14 (1840, nec Gm.).
Cecropis rufula (Temm.), A. E. Brehm, J. f. Orn. 1853, p. 453.
Cecropis capensis, A. E. Brehm, J. für Orn. 1855, p. 492 (nec Gm.).
Lillia rufula (Temm.), Boie, J. für Orn. 1858, p. 364.

Hirondelle rousseline, French; *Alpenschwalbe*, German; *Rondine rossiccia*, Italian.

Figuræ notabiles.

Werner, Atlas, *Chelidons*, Suppl. pl. 1; Fritsch, Vög. Eur. taf. 23. figs. 2, 3; Naumann, Vög. Deutschl. taf. 383. fig. 4.

Ad. pileo et dorso chalybeo-nigris, nuchâ et collo postico toto ferrugineis, dorsi plumis ad basin albis: alis et caudâ nigris, hac et secundariis intimis cum tectricibus alarum chalybeo nitentibus: uropygio ferrugineo, in parte imâ pallidiore, fere albido: supracaudalibus majoribus cum caudâ concoloribus: mento, gulâ, regione paroticâ et corpore subtùs albis, pectore et abdomine vix, et corporis lateribus conspicuè pallidè rufescente cervino lavatis: gulæ, gutturis et pectoris plumis centraliter nigro-fusco striatis: abdomine striis obsoletis notato: subcaudalibus conspicuè chalybeo-nigro terminatis: subalaribus cum abdomine concoloribus: rostro nigricante: iride fuscâ: pedibus saturatè brunneis.

Juv. adulto similis sed coloribus sordidioribus: corpore subtùs vix striato et magis rufescente cervino lavato: secundariis et tectricibus alarum nonnullis rufescente cervino apicatis: rectricis externæ utrinque pogonio interno maculâ albidâ magnâ centraliter notato, caudâ minus furcatâ.

Adult Male (Genoa, 8th May). Crown glossy black, with purplish or steel-blue reflections; entire nape and hind neck rusty red; back similarly coloured to the crown, but marked with white, the feathers being white at the base, and this colour shows through here and there; wings black, the inner secondaries and wing-coverts glossed with steel-blue; rump rusty red, becoming pale, almost white on the upper portion of the tail-coverts, longer tail-coverts black, with steely reflections; tail very deeply forked, black, slightly glossed with steel-blue; chin, throat, ear-coverts, and underparts generally white, slightly washed with pale rufous-buff on the breast and abdomen, and more especially on the flanks; most of the feathers on the throat and breast with very narrow dark central stripes, which gradually become obsolete on the lower abdomen; under tail-coverts very broadly tipped with glossy black; under wing-coverts like the abdomen; bill blackish; iris blackish brown; feet dark brown. Total length about 7 inches, culmen 0·32, gape 0·52, wing 4·8, tail 4·15, tarsus 0·55.

Adult Female. Undistinguishable from the male.

Young Male (Smyrna, 31st July). Resembles the adult, but is duller in colour; the underparts are scarcely striated, and are washed with a deeper shade of rufous-buff; secondaries and some of the wing-coverts tipped with rufous-buff; the outer rectrix on each side with a large whitish patch nearly on the centre of the inner web; and the tail is much less forked than in the adult.

This beautiful Swallow inhabits Southern and South-eastern Europe, Asia Minor, and is found, though rarely, in North-east Africa. To the eastward it is met with at least as far as Baluchistan and Turkestan, being replaced in India and Eastern Asia by a closely allied species (*H. erythropygia*, Sykes), which is probably the true *H. daurica* of Linnæus.

It has once occurred in Heligoland, but is not otherwise found in Northern or Central Europe, nor do I find it recorded as having been met with in Spain or Portugal; but Degland and Gerbe state that it occurs tolerably often in Languedoc, and ascends the basin of the Rhone, having been observed even in the Departments of the Drôme and the Côte d'Or; they add that M. Lunel found a pair nesting in 1845 or 1846 near Avignon, and obtained the eggs, which were white, spotted with reddish brown, exactly like those of the common Swallow—showing clearly that they were *not* those of the present species, which lays pure white eggs. In Italy, Salvadori states that some individuals are obtained nearly every year in Liguria. Savi also notices the capture of a specimen in Tuscany. In Sicily it appears to be not uncommon near Messina; but from the Island of Sardinia it has not yet been recorded. I have specimens from Genoa (where it is stated to occur regularly), sent to me by the Marquis Doria; and Mr. C. A. Wright, who has obtained it at Malta, writes (Ibis, 1864, p. 57) as follows:—"I was long of opinion it would turn up in Malta; but it was not until the 5th April, 1862, that I had the pleasure of seeing it. Out shooting with Dr. Leith Adams, at the Salini, we distinctly recognized three individuals, of which Dr. Adams succeeded in shooting one. We noticed at the same time *H. rustica* and *H. riparia*, of which I shot two or three. A strong easterly wind was blowing; indeed, easterly winds had prevailed for some days, to which probably was owing the presence of *H. daurica* so far to the westward of its usual habitat. A day or two subsequently Dr. Adams obtained another specimen from the same place, and saw several others. There are two specimens in the Malta University, evidently taken many years ago; but no locality or time is given." In Greece it is common, and breeds, according to Lindermayer, in colonies in Acarnania; and Dr. Krüper states (J. f. O. 1860, p. 274), it "is found in Acarnania, from the extreme point of the Vorassova Mountains opposite Patras, along the mountain-range to the Phidaris (Euenos) river, from there along the Zygos Mountains to the Aspropotamos (Acheloos); to the north near the harbour of Astaco, in the Klissura, near Vrachori, and four hours' walk from there on the road between Prostova and Carpenisi. We further met with it on the Parnassus, near the villages of Arachova, Agorian, Gravia, Mariolates, Dadi, and most common near Velitza. Doubtless it ranges further north in Turkey, perhaps as far as Dalmatia. It certainly inhabits also the southern portion of Greece and the Peloponnesus. . . . . It doubtless arrives about the same time in Acarnania as *Hirundo rustica* and *urbica*. Last year I saw the first *H. rustica* on the 20th March, and the first *urbica* and *rufula* on the 26th of that month. They probably leave in October. I frequently saw them late in September on the Parnassus." Mr. Seebohm, however, informs me that, according to his experience, it arrives a full month later than the Martin and Chimney-Swallow. I find no record of its occurrence in Turkey; nor does it appear

to have ever occurred in South Germany. In Asia Minor, however, it is tolerably common, and breeds near Smyrna. In Palestine it is stated by Canon Tristram to be the common Swallow of the Holy Land, being most abundant throughout the country, both in the plains, the Ghor, and the hills after the middle of March. It occurs in North-east Africa, but does not appear to be very common. Captain Shelley writes (B. of Egypt, p. 122):—"it ranges throughout Egypt and Nubia, but is of rare occurrence. Towards the end of March I constantly saw a pair flying over a marsh near Damietta, and on the 30th of that month obtained one of them." Von Heuglin writes (Orn. N.O.-Afr. p. 158):—"Dr. A. E. Brehm only met with this species once in Nubia, on the 3rd April 1850 at Ibrim, and another time in Egypt in company with Chimney-Swallows. I observed it in about the same locality at Der; and on the 9th April near Anaho, on the western slope of the Abyssinian highlands." Mr. Blanford shot two specimens at Koomaylee in February; but it appears to be rather rare in Abyssinia. In North-west Africa it is stated by Loche to be of extremely rare occurrence in Algeria; but he cites no instance of its capture, and it is by no means proved that it really has occurred there.

It is rather difficult to trace the precise range of the present species in Asia, as it there meets a closely allied form, differing from the European bird in having the underparts very distinctly striated, the rump being much darker and redder, the back being pure steely blackish, without any markings, and the black on the crown joins that on the back, the red collar not extending round the neck; and the eastern bird is also smaller in size. This eastern form is generally considered to be the true *Hirundo daurica* of Linnæus; but there appears to be some doubt as to whether Linnæus described the eastern or the western form under that name, and it is probably as well, if not better, known by the name of *Hirundo erythropygia*, Sykes. Looking at the uncertainty as to what Linnæus's bird really was, I have preferred to use the name of *Hirundo rufula*, by which it is perhaps best known, for the present species, as there is no doubt as to the bird described by Temminck being the western form.

So far as I can with certainty say, the present species ranges as far east as Turkestan. Mr. R. B. Sharpe certainly stated (P. Z. S. 1870, p. 314) that he had in his collection a specimen from Dauria identical with others from Palestine; but this is a mistake, unavoidable on the part of Mr. Sharpe; for although the specimen was labelled by M. Verreaux as being from Dauria, it really came from Turkestan. The bird in question passed into my possession; and I find that, fortunately, M. Verreaux has left a small original label still attached, and on this I find, written in Russian, that it was shot near Karatau, in Turkestan. Doubtless M. Verreaux had received it with other birds, amongst which some were probably from Dauria, and, not being able to decipher the Russian label, took it for granted that it also came from Dauria, where, so far as I can gather, the eastern form, and not the present one, is found.

Hirundo rufula is found in Persia; but Mr. Blanford says that he only met with it in Southern Persia and part of Baluchistan. It was, he states, more common near Shiráz than elsewhere, and he never met with it further to the north. I possess one of the specimens collected by Mr. Blanford, and find that it agrees closely with European-killed examples of *H. rufula*. Severtzoff (Turk. Jevotnie, p. 67) says that the present species is found throughout Turkestan, and breeds throughout the country at an altitude of from 4000 to 6000 feet. As above stated, I possess one specimen from Karatau precisely similar to our European bird.

Judging from the plate in the 'Fauna Japonica,' the bird found in Japan is *H. erythropygia*, Sykes, and not the present species.

In its habits the present species is said to agree closely with our common Chimney-Swallow. Canon Tristram writes (Ibis, 1867, p. 362):—"It is a beautiful bird on the wing, showing its chestnut collar and rump to great advantage, as it turns continually, flying much more slowly than the common Swallow, and beating repeatedly over a more limited extent of ground. Though feeding in flocks, I never knew this Swallow to breed in company; and very rarely were two nests to be found in one cave. The nest is a beautiful structure, composed of the same materials as that of the House-Martin, but is invariably attached to the flat surface of the underside of the roof of a cave or vault. It is of the shape of a retort, with a bulb of the size of a Thrush's nest, large and roomy, the neck or passage for entrance being sometimes a foot or more in length; the inside of the clay chamber is warmly lined with feathers. Laborious as must be the construction of this elaborate edifice, the little architects are very fastidious, and frequently desert two or three half-finished nests in succession, commencing a new one in the same cavern. But after all they are sadly bullied. So tempting a domicile invites unscrupulous vagrants; the Galilean Swift (*Cypselus affinis*) assumes the rights and wrongs of the compound householder and exercises the franchise of the nest, leaving the Swallow to pay the rates. The Swift contracts the entrance by a casement of feathers and gelatinous secretion, and then bids defiance to the original landlord. Mr. Simpson found the Syrian Nuthatch indulging in similar acts of lawlessness in Greece. When so treated the Swallow does not leave the cave, but humbly sets to work to construct a new nest not far off. A favourite breeding-place of *H. rufula* is under the arches of the corridors of the Monastery on Mount Carmel. The eggs are four in number, pure white, considerably larger than those of the House-Martin, and flatter at the small end."

I am indebted to Mr. H. Seebohm for the following notes on the breeding-habits of this Swallow, he having met with it when on a collecting-trip in Greece and Asia Minor with Dr. Krüper. "I found *Hirundo rufula*," he writes, "breeding both at Nymphion, east of Smyrna, and in the Parnassus. Both in Asia Minor and in Greece it is a summer visitor only, arriving early in April, at least a month later than its congeners *Hirundo rustica* and *urbica*. Fresh-laid eggs may be obtained from the middle of May to the middle of June. I did not meet with any evidence of its breeding a second time, except where the first nest had been destroyed or disturbed before the eggs were hatched. I have a young bird in full plumage of the first year, shot on the 30th July. During the breeding-season it frequents the warm sheltered valleys in the highest parts of the vine-regions. We never met with it so high up as the pine-regions. On the wing *Hirundo rufula* is quite as much at home as *rustica* or *urbica*, and may not unfrequently be seen hawking for flies in company with both these species. It may, however, be easily distinguished from those birds at some distance, as it possesses the long forked tail of the one in addition to the white rump of the other. It may also be distinguished by its note, which resembles that of *rustica*, but may be described as a low *whit* compared with the loud *whet* of that bird. The limestone crags of the Parnassus and of Asia Minor east of Smyrna abound in caves, on the roofs of which this bird builds its curious nest; but so far as my observation goes it never breeds in colonies. The nest is built of mud, and is very similar to

that of *Hirundo urbica*, with the addition of a funnel at the top made of the same material, the entrance to which is slightly bent downward, so that the whole structure reminds one of a chemist's retort. It is lined with dry grass and feathers. The eggs, from four to five in number, are pure white, a size smaller than those of *Hirundo urbica*, and less pointed at the smaller end than the eggs of that species usually are, measuring from $\frac{33}{40}$ by $\frac{23}{40}$ to $\frac{31}{40}$ by $\frac{22}{40}$ inch. From the similarity of this bird to *H. rustica* one might have expected the egg to be spotted; but whereas the eggs of *H. rustica* and *Cotyle rupestris* may always be seen in the nest, those of *H. rufula*, *H. urbica*, and *C. riparia* never can be. In this family the colouring of the egg seems to bear no relation to generic distinction as it does amongst the Warblers, but would seem to be entirely dependent on the greater or less concealment afforded by the construction and position of the nest. Both in the neighbourhood of Smyrna and in the Parnassus this bird is comparatively local and rare, but is much more abundant in Acarnania."

I possess the eggs of this species collected by Dr. Krüper, but can add nothing to the above description by Mr. Seebohm.

The specimen figured is an adult male shot near Genoa, and presented to me by the Marquis Doria of that town.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Genoa, May 8th, 1869 (*Marquis Doria*). *b*, ♀ *ad.* Macedonia, August 13th, 1870 (*Dr. Krüper*). *c*, ♂ *juv.* Smyrna, 31st July, 1871 (*Dr. Krüper*). *d*, ♂. Mount Carmel, March 28th, 1864 (*H. B. Tristram*). *e*, Gennesareth, Palestine, March 30th, 1864 (*H. B. Tristram*). *f*, ♂. N.W. of Bampúr, Baluchistan, April 12th, 1872 (*W. T. Blanford*). *g*, ♂. Karatau, near Boilucul, Turkestan, August 1st, 1864.

E Mus. Ind. Calc.

a, *b*, ♂. N.W. of Bampúr, Baluchistan, April 12th, 1872. *c*, ♂. Shiraz (*W. T. Blanford*).

E Mus. Howard Saunders.

a, ♂, *b*, *c*, ♀. Beliza, Greece, May 16th, 1873 (*H. Seebohm*). *d*, ♂ *juv.* Macedonian Olympus, August 25th, 1870 (*Dr. Krüper*).

Genus CHELIDON.

Hirundo apud Linnæus, Syst. Nat. i. p. 344 (1766).
Chelidon, Boie, Isis, 1822, p. 550.

By many authors both *Chelidon* and *Cotile* have been united to the genus *Hirundo*; but the differences in structure and mode of nidification are quite sufficient to justify their being generically separated.

The present genus is represented in the Palæarctic, Ethiopian, and Oriental Regions, one species only, the type of the genus, being found in the Western Palæarctic Region, where, like the true Swallows, it is only a summer resident, migrating southward in the autumn, when its food becomes scarce; for like *Hirundo rustica* and its congeners, *Chelidon urbica* feeds solely on insects, which it captures on the wing. In general habits the species belonging to the genus *Chelidon* do not differ from the true Swallows; and their nests, like the nests of those birds, are constructed of mud, lined with a few straws and feathers. They deposit from four to six pure white eggs.

Chelidon urbica, the type of the genus, has the bill very short, triangular in form, broad at the base, the tip notched; gape with scarcely any discernible bristles; wings very long, pointed, the first quill longest; tail deeply forked, but the lateral feathers not so elongated as in *Hirundo*; tarsi and toes feeble, covered with short feathers; claws slightly curved, acute.



HOUSE MARTIN.
CHELIDON URBICA.
884

CHELIDON URBICA.

(MARTIN.)

Hirundo minor sive *rustica*, Brisson, Orn. ii. p. 496 (1760).
Hirundo urbica, Linn. Syst. Nat. i. p. 344 (1766).
Hirondelle au croupion blanc, Montb. Hist. Nat. Ois. vi. p. 614, pl. xxv. fig. 2 (1779).
Chelidon urbica (L.), Boie, Isis, 1822, p. 550.
Chelidon fenestrarum, C. L. Brehm, Vög. Deutschl. p. 140 (1831).
Chelidon rupestris, C. L. Brehm, op. cit. p. 140 (1831).
Hirundo urbica candida, J. F. Naumann, Vög. Deutschlands, vi. p. 77 (1833).
Hirundo urbica varia, J. F. Naumann, ut suprà (1833).
Hirundo urbica pallida, J. F. Naumann, ut suprà (1833).
Chelidon tectorum, C. L. Brehm, Vogelfang, p. 47 (1855).
Chelidon urbica vulgaris, A. E. Brehm, Verz. Samml. C. L. Brehm, p. 3 (1866).
Chelidon urbica latirostris, A. E. Brehm, ut suprà (1866).
Chelidon urbica fenestrarum, A. E. Brehm, ut suprà (1866).
Chelidon urbica tectorum, A. E. Brehm, ut suprà (1866).
Chelidon urbica rupestris, A. E. Brehm, ut suprà (1866).
Chelidon urbica septentrionalis, A. E. Brehm, ut suprà (1866).

White-rumped Swallow, *Martin*, *House-Martin*, English; *Hirondelle de fenêtre*, French; *Andorinha*, Portuguese; *Vencejo*, Spanish; *Rondine comune*, Italian; *Huttafa*, Maltese; *Haus-Schwalbe*, German; *Huiszwaluw*, Dutch; *Bysvale*, Danish; *Sveâla*, Færoese; *Svala*, Icelandic; *Tagsvale*, Norwegian; *Hussvala*, Swedish; *Räystäspääsky*, Finnish; *Strijek*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 542. fig. 2; Werner Atlas, *Chélidons*, pl. 2; Kjærb. Orn. Dan. taf. xiv. —; Frisch, Vög. Deutschl. taf. 17. fig. 2; Fritsch, Vög. Eur. taf. 24. fig. 5; Naumann, Vög. Deutschl. taf. 145. fig. 2; Sundevall, Sv. Fogl. pl. xvii. fig. 6; Gould, B. of Eur. pl. 57; id. B. of G. Brit. ii. pl. 6; Schlegel, Vog. Nederl. pl. 58; Roux, Orn. Prov. pl. 144.

♂ *ad.* capite, nuchâ, dorso et scapularibus nitidè chalybeo-nigris: alis et caudâ nigris vix metallico nitentibus, caudâ furcatâ, sed minus quam in *H. rusticâ*: uropygio, supracaudalibus superioribus, gulâ, gutture et corpore subtùs niveis, hypochondriis vix griseo lavatis, subalaribus albicantibus: pedibus lanâ albâ usque ad digitos vestitis.

♀ *ad.* mari similis.

Pull. capite summo et corpore suprà sordidè fuscis vix chalybeo nitentibus nec nigris, pectore et hypochondriis grisescente cervino lavatis.

Adult Male (Piedmont, 28th April). Crown, nape, back, and scapulars deep steely bluish black; wings and tail blackish, with a very faint metallic gloss; wing-coverts similarly coloured; rump and upper tail-coverts white, some of the lowest of the latter broadly terminated with deep steely blackish blue; tail forked, the outermost feather 0·85 inch longer than the central one; entire underparts pure white; the flanks slightly tinged with grey; under wing-coverts whitish; legs and feet closely covered with short hair, like white feathers; bill black; iris deep brown. Total length about 5·5 inches, culmen 0·38, gape 0·5, wing 4·4, tail 2·6, tarsus 0·52.

Female. Similar to the male.

Young from the nest (Belgium). Differs from the adult in having the upper parts dark sooty brown, with a slight steel-blue gloss here and there; the breast and flanks are washed with buffy grey, and the tail is very short and not forked.

The present species inhabits Europe generally during the summer season, migrating southward in the winter, at which season it is found in Africa. To the eastward it has certainly been met with in Asia as far as Persia; but it is difficult to say with certainty if it ranges further east than that country.

In Great Britain it is a common summer resident, arriving a little later than the Swallow, remaining with us to breed, and leaving again for the south in the autumn. Generally distributed throughout England, it is also met with in almost equal numbers in Scotland, as far north as Sutherland and Caithness; but, according to Mr. Robert Gray, it is altogether wanting in the Outer Hebrides, though common in Skye, Mull, and Iona; and Messrs. Baikie and Heddle say that it breeds at Kirkwall, in Orkney. In Ireland, as in England, it is generally distributed, and common. It is a rare visitant in Iceland; and Faber states that in June 1819 they commenced to breed at Husevig, in Northern Iceland, but soon left. It occurs not unfrequently in the Færoes in the spring; but Mr. Benzon informs me that there does not appear to be any instance of any having ever remained there to breed.

In Scandinavia it is common in the southern and central districts, but rarer than the Swallow in the extreme north. Mr. Collett says that it breeds in colonies throughout the eastern parts of Norway, but is less numerous on the west coast, though not uncommon, and breeds commonly in some places, as, for instance, at Bergen. On the fells it breeds in and above the birch-region, in colonies in the rocks on the Fillefjeld, Hugakollen in Valders, the Kvamenaaset in Öie, the Blaahöerne, and other places in the Dovre range. Pastor Sommerfelt says that it breeds here and there in East Finmark, as far north as Vardö; and, according to Wolley, a colony breed in a cliff near the Bögfjord, in South Varanger. In Sweden it is likewise common throughout the country during the summer season, extending into Lapland, arriving somewhat later and leaving a little earlier than the Swallow. I met with it in almost all parts of Finland I visited; but it appears not to range as far north as the Swallow; for Magnus von Wright did not observe any further north than Aavasaksa, a little above Torneå. In Russia, as elsewhere, it is generally distributed and common. Meves met with it as far north as Archangel; and Sabanäeff says that in the Ural he observed it as far north as about 60° N. lat. In the Baltic Provinces, Poland, and Germany it is common during the breeding-season; and the same may be said as regards Denmark. Mr. A. Benzon, writing to me from

Copenhagen, says:—"'Bysvale' is the common name here for this bird. Formerly it was called 'Skorstens-svale' (lit. Chimney-Swallow); for, owing to the mode of building the chimneys then in vogue, it usually placed its nest on them. Besides these it has many local names, chiefly derived from its mode of nidification. At Falster, for instance, it is called 'Kirkesvale,' as the churches are the best places for building its nest; and it is also called 'Kjœbstadsvale,' 'Murs-vale,' and, on account of its white rump, 'Hvidbag' and 'Hvidsvale.' The average date of its arrival here (in Denmark) is the 6th of May; but there is a variation in the dates of its arrival of about twenty days; and the average temperature when it arrives is 9°·9 Centigr.: thus it arrives later and in warmer weather than the Swallow. The earliest date of its arrival is the 18th of April, and the latest at the same place (Elsinore) the 12th of May, the difference being twenty-four days; at Copenhagen the earliest date is the 26th of April, and the latest the 18th of May; and at Nöstved the earliest date is the 5th and the latest the 23rd of May. From the materials at my disposal I gather that it arrives in England only about five days earlier than here, but in Belgium as much as twenty-one days earlier." Mr. Labouchere informs me that it arrives in Holland about the middle of April and leaves again in October, being generally distributed throughout the country and as common as the Swallow during the summer; and Baron de Selys-Longchamps, who speaks of it as being common in Belgium, says that it arrives there in April and leaves in September. Throughout France it is a common summer resident; and Messrs. Degland and Gerbe say that in mild winters some remain at Lille as late as the 15th of December. In Portugal it is stated by Professor Barboza du Bocage to be common; and Colonel Irby says that it is numerous during the summer in Spain, the first being seen near Gibraltar in the spring on the 5th of February.

Passing eastward, again, I find it recorded by Bailly as abundant in Savoy, arriving from the 8th to the 10th of April; and in Italy it is stated by Salvadori to be numerous during the summer. In Sicily, according to Doderlein, it is local, being very rare at Palermo and Termini, and very numerous along the southern coast. Many remain in the island throughout the winter; and of the later arrivals some breed; but the majority pass over on their migrations. Mr. A. B. Brooke states (Ibis, 1873, p. 237) that he first observed it in Sardinia on the 27th of March, and adds that it breeds very commonly on that island; and Mr. C. A. Wright says that at Malta it is quite as common as the Swallow, and is seen at the same seasons as that species. Lord Lilford found it common in Epirus. Both Lindermayer and Von der Mühle state that it abounds in Greece; and the latter adds that it is the commonest Swallow found there. Lindermayer states that it arrives in great numbers early in March, breeds twice in the season, and leaves again about the middle of September, some few stragglers remaining till the end of October. Elsewhere in Southern Europe it is a common species during the summer season; but I have no record of its remaining during winter. In Asia Minor it is a numerous summer resident, arriving, according to Dr. Krüper, at Smyrna from the 29th of February and the 11th of March; and he adds that large colonies breed in the cliffs in Asia Minor. Canon Tristram, who met with it in Palestine, says that it was the last of the Swallow tribe to return to that country. It reappeared, he writes, in small numbers about the 5th of April, and breeds in colonies on the sheltered faces of cliffs in the valleys of Northern Galilee. Mr. C. W. Wyatt says (Ibis, 1870, p. 12) that he met with a few Martins at Wady Wisset, in the Sinaitic peninsula, on the 16th of March, but,

with the exception of a single bird shot in Wady Feirán, he did not observe it elsewhere. It is found in North-east Africa, and is said by Von Heuglin to winter in the Nile country. Captain Shelley writes (B. of Egypt, p. 125) that it is "occasionally met with both in Egypt and Nubia, but does not appear to make its home in those countries; for on each occasion when I observed it, during the months of April and May, it seemed to have no fixed abode, but to be on its way northward. This may possibly be accounted for by the general absence of large houses, against which we know this bird usually likes to place its nest." According to Von Heuglin it is a migrant in North-east Africa and Arabia, passing in February and March and from August to the early part of October, partly in companies and partly together with other allied species. Mr. Blanford obtained a single example at Koomayli, in Abyssinia, in February, which was hunting over jungle in company with *H. rustica* and *H. melanocrissa*.

In North-western Africa it both winters and breeds, being less common in the winter than in the summer. Loche says that it breeds numerously in Algeria, and that only a few remain throughout the winter; and Mr. J. H. Gurney, jun., writes (Ibis, 1871, p. 74) that he first saw it flying over the barracks at Blida on the 17th February, and on the 18th they were repairing their old nests at Miliana. It occurs on the Canaries, though not recorded by Berthelot. Dr. Carl Bolle states (J. f. O. 1854, p. 460) that he saw large flocks on the 2nd April at Oliva, in Fuerteventura, which disappeared as quickly as they came. Mr. Godman also says (Ibis, 1872, p. 171) that he saw a pair which had a nest at St. Anna, in Madeira, but thinks that it may only be of accidental occurrence there. It has been obtained, though only on one occasion, in Prince's Island, on the west coast of Africa, by Mr. J. G. Keulemans, who shot one in January at a plantation about 1500 feet above the sea-level. He says that the natives had never seen this species before on the island, and he never met with it on any other occasion during his travels in Western Africa.

It is rather difficult to define the eastern limits of the range of the present species; for in Asia it is, to a large extent, replaced by several closely allied, though fairly distinct, species. Mr. Blanford says that it is not rare in Persia, though scarcely so common as it is in many parts of Europe; and Dr. Jerdon writes (B. of I. i. p. 167) that he "only found it in small numbers in one locality on the Neilgherries, about 5000 feet high, on a cultivated ridge of the hills, in the month of March."

The allied Asiatic species are as follows:—

Chelidon cashmiriensis, Gould (P. Z. S. 1858, p. 356), which inhabits North-west India and Cashmere. I am indebted to Mr. Gould for the loan of his type of this species from Cashmere and of two examples from N.W. India, which, I find, differ from our European Martin in being smaller and having the under surface of the wings and axillaries brown, the tail being shorter and less forked.

Chelidon whitelyi, Swinhoe (P. Z. S. 1862, p. 320; Ibis, 1874, pl. vii. fig. 2), which resembles *C. cashmiriensis*, but differs from it and all other Martins in having *all* the upper tail-coverts white. Only one specimen (from Pekin), the type, is known to exist in any collection here in England. I think it very probable that the present species is identical with *Chelidon lagopoda* (Pall.) from Dauria; but not having had an opportunity of examining a specimen from the latter locality, I cannot speak with certainty.

Chelidon dasypus, Bp. (*C. blakistoni*, Swinh. Ibis, 1874, p. 151, pl. vii. fig. 1), which is found in Japan during the summer, and migrates down to Borneo. In size it resembles our bird, but has the under wing-

coverts and axillaries brown, and the edge of the chin and of the lower part of the gape are black, this latter character being only visible on close examination.

Chelidon nipalensis (Hodgs.) is a very small, beautiful little Martin inhabiting Nepal. It has the upper parts, head, and throat, under wing-coverts, and under tail-coverts glossy black, the rump being white.

Besides the above, there is said to be a distinct species in the Bogos country, North-east Africa—*Chelidon albigena,* Heugl. (J. f. O. 1861, p. 419), which differs from our European bird in having a white spot on the basal portion of the inner web of the outer tail-feathers. Of this species I have not examined an example.

In its habits the Martin resembles the common Swallow, but may easily be distinguished from that species when on the wing by its conspicuous white rump. Its flight, like that of the Swallow, is exceedingly graceful and swift, though it appears to be somewhat less powerful on the wing than that species. One frequently sees the two species together, each sweeping about with that peculiar dexterity so characteristic of this group; and this species, like its ally, flies high or low as the influence of the weather causes the insects to keep near the earth or high up in the air. It feeds entirely on insects of various kinds, which it most frequently catches on the wing; but when hawking after its insect prey above water, it frequently stops and picks one off the surface (which it touches with its breast, stretching its wings up almost perpendicularly to avoid striking the water) and then proceeds on its devious winding flight.

The note, which is usually uttered when the bird is on the wing, is a chirp or twitter; but during the breeding-season a sort of warble or continued twitter, which, though not very remarkable for melody, is not an unpleasant sound, is almost always uttered when they enter their nest.

The Martin arrives usually a few days later than the Swallow, and soon begins to build or repair its nest. If undisturbed, the same pair will year after year in succession resort to the same nest; and Macgillivray states that a pair visited Carlowrie for the very long period of forty successive years. It appears difficult to be able to say with any degree of certainty that the birds which annually made their appearance and remained to breed were really the same pair, as they were not marked; but many instances are on record of the birds having been caught and marked, and the same birds were found to resort to their old nests the following year.

The nest, which is placed in some sheltered position (under the eaves of a roof, in the upper corner of a window, or on the face of a rock), is constructed, like that of the Swallow, of mud; but, unlike the nest of that species, it is not open at the top, but built right up, an aperture being left on the sheltered side. Macgillivray, with his usual accuracy, describes a nest as follows:—"The outer shell is a solid mass of fine loam, which has been built of pellets in the form of soft mud, so that the outer surface presents horizontally compressed mamillæ. The average thickness of this crust is seven twelfths of an inch. It is quite friable; and if any glutinous matter has ever been intermixed with the mud, it has entirely disappeared; but it is in some measure held together by a considerable intermixture of short straws. The next layer is of straws of various kinds, mostly decayed. This is followed by a thick layer of wool, which is succeeded by a quantity of hogs' bristles, cows' hair, human hair, a piece of linen, a bit of tape, and a number of feathers, chiefly of the domestic fowl." Most of the nests I have examined were lined almost entirely with feathers, intermixed with a little wool or hair.

Mr. Seebohm, who has examined nests of this species in many parts of Europe, sends me the following notes:—"The House-Martin generally arrives in the neighbourhood of Sheffield early in April. In Greece and Asia Minor I learned from Dr. Krüper, Herr von Gonzenbach, and others that this bird regularly arrives during the first week of March, whilst in the north of Norway, in the few places where it is found, as for instance in some of the more sheltered villages on the Varanger Fjord, Mr. Nordvi informed me that it does not make its appearance until the first week in May. Everyone is familiar with its well-known nest under the eaves of cottages and other houses. I have, however, met with small colonies in Dovedale (a limestone district in North Derbyshire), as well as at Malin Cove near Settle in North Yorkshire (also a mountain-limestone district), which had built their nests against the cliffs. In the Parnassus this is usually the case. At Castri (the ancient Delphi) the nests of this bird are common under the eaves of the houses in the village, and there is a large colony occupying the cliffs (in company with the Rock-Sparrow, *Passer petronia*) in the picturesque gorge from which the famous spring flows. We also met with other colonies in the mountain-limestone cliffs at Agoriane and Belitza. But by far the largest colony I have ever seen is in a romantic glen in the mountains overlooking Missolonghi. The rocks overhang very much, and there must have been hundreds of nests under the overhanging part; whilst outside and in the valley the birds themselves were flying in thousands, like a swarm of bees. In a cleft of the rock, in the midst of the Martins' nests, was a huge nest of the White-tailed Eagle; and many of the nests of the Martin were in the possession of Sparrows (*Passer domesticus*), who seem to have the same propensity for annexing their neighbours' houses as the Sparrows in this country. At Rustchuk, on the Danube, there is a very interesting colony of these birds, breeding in great numbers together with the Barn-Swallow. The nests are all placed against the beams of the railway-station; and both species breed indiscriminately side by side. At first I could hardly tell one from the other; but I soon found out that the Swallow made a disk of mud, level at the top, about an inch or more from the overhanging beam, whilst the Martin built right up to the overhanging beam, leaving only an oval hole in the centre for ingress and egress."

The eggs of this species, usually four or five in number, are rather elongated in form, tapering rather towards one end, pure white in colour, and in size measure about $\frac{30}{40}$ by $\frac{22}{40}$ inch.

Mr. Benzon tells me that he has carefully watched them collecting mud for their nests, and that they take small pieces in their mouth, and when they have collected several they fly to the nest and work the mud into the structure, the spittle assisting to fix it. Not unfrequently, he says, two or three nests are fastened close together, the entrance-holes being made on different sides for the sake of convenience; and occasionally the hole is made almost in the centre of the side, and not above. In Denmark it breeds twice in the year—in June, and again in July or August; and Mr. Benzon relates an instance where a pair, after having built a nest as late as July, were driven out by Sparrows, and then repaired an old nest and reared two broods—one in August, and the other in September. Referring to the often told tale of Martins walling up Sparrows in their nests when they could not drive them out, the latter having taken and kept forcible possession, he says that a most reliable man at Falster assured him that he had more than once taken out Sparrows dead from Martins' nests, they having been walled up by the Martins. He also relates a rather interesting history of a travelling Martin's nest, which I

translate as follows:—"A steamer, the 'Örn,' which plied regularly on the river between Carlstad and Lyckan, in Sweden, was early in the summer visited by a pair of Martins, which built under a ledge in the vessel on the starboard side, close to the wheel-house; but being disturbed there by the water dashing up, they built a new nest a few yards further forward, the nest being only about a foot or so above the water, and hatched their young, which flew in August, but for some time returned regularly to the nest. When incubating, the birds travelled with the steamer backwards and forwards; but when the young were hatched they took up their quarters at Carlstad, and accompanied the steamer halfway on her trip, meeting her again on the return journey at the same place."

The specimen figured is the adult bird above described, and is in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Hampstead, September 27th, 1871 (*Davy*). *b*. Cookham, July 26th, 1867 (*W. Briggs*). *c*, ♂, *d*, ♂. West Drayton, July 7th, 1869 (*Paraman*). *e*, *juv*. Belgium (*Dubois*). *f*, ♂. Piedmont, April 28th, 1870 (*Salvadori*). *g*, ♀. Piedmont, June 13th, 1870 (*Salvadori*). *h*, ♀. Copenhagen, September 4th, 1870 (*Benzon*).

E Mus. Howard Saunders.

a, *b*, ♀. Granada, May. *c*. Tangier (*Olcese*). *d*, *juv*. Reigate, December 6th, 1873 (*H. S.*).

Genus COTILE.

Hirundo apud Linnæus, Syst. Nat. i. p. 344 (1766).
Cotyle, Boie, Isis, 1822, p. 550.
Chelidon apud Boie, ut suprà.
Biblis apud Lesson, Compl. Buff. viii. p. 495 (1837).
Cotile apud C. L. Brehm, J. f. Orn. 1853, p. 452.
Ptyonoprogne apud Hume, Stray Feathers, i. p. 1 (1872).

The genus *Cotile* is, as will be seen by the generic characters given below, not only fairly separable from *Hirundo* and *Chelidon*, but it might even with some degree of justice be further subdivided by separating *Cotile rupestris* and *Cotile obsoleta*, though I have not thought it advisable to do so. These two species differ in their mode of nidification and in their eggs from *Cotile riparia*; and they have, moreover, the tarsi quite bare as in *Hirundo*, though scutellate on the anterior surface. Had I decided to separate these two species from *Cotile riparia*, I should have had either to include them in the genus *Hirundo*, or else to separate them still further by placing them in the genus *Biblis*, Lesson.

The genus *Cotile* is represented in the Palæarctic, Ethiopian, Oriental, Nearctic, and Neotropical Regions, three species being found within the limits of the Western Palæarctic Region. These birds are entirely insectivorous, capturing their prey on the wing; and, like their allies, they are swift and strong in flight, but unable to move about on the ground owing to their small and feeble legs and feet. Their note is a somewhat feeble twitter; and they have no song, except a modulation of their usual note. *Cotile riparia* makes a nest of straws and feathers, which it places in a hole in a bank or cliff, and deposits pure white eggs; whereas *Cotile rupestris* and *Cotile obsoleta* build hemispherical nests of clay lined with feathers, which they place against a rock or building, and deposit white eggs spotted with red.

Cotile riparia, the type of the genus, has the bill as in *Chelidon*, the nostrils basal, concealed by short feathers; gape furnished with a few short bristles; wings very long, pointed, the first quill longest; tail deeply forked, though less so than in *Chelidon*; tarsus and toes feeble, the tarsus covered in front with four larger and three inferior scutellæ, and slightly feathered on the posterior side; claws rather long, curved, very acute and slender; plumage soft, the upper parts of the body dull brownish, and not dark-coloured and metallic-glossed as in *Hirundo* and *Chelidon*.

In the articles on the species included in this genus I spelt the generic title *Cotyle*; but Mr. Wharton has shown (Ibis, 1879, p. 451) that this is a mistake, and that the correct orthography is *Cotile*.



J.G. Keulemans del.

Mintern Bros. imp.

SAND MARTIN.
COTYLE RIPARIA

COTYLE RIPARIA.

(SAND-MARTIN.)

Hirundo riparia, Linn. Syst. Nat. i. p. 344 (1766).
Hirundo cinerea, Vieill. Nouv. Dict. xiv. p. 526 (1817).
Cotyle riparia (L.), Boie, Isis, 1822, p. 550.
Cotyle fluviatilis, C. L. Brehm, Vög. Deutschl. p. 142 (1831).
Chelidon microrhynchos, C. L. Brehm, tom. cit. p. 143 (1831).
Cotyle palustris, Cab. Mus. Hein. i. p. 49 (1850, nec Steph.).
"*Cotyle littoralis*, Hemp. & Ehr.," Licht. Nomencl. p. 61 (1854).

Sand-Martin, *Bank-Swallow*, English; *Mallag*, Gaelic; *Hirondelle de rivage*, French; *Golondrina de ribera*, *Oroneta*, Spanish; *Topino*, Italian; *Uferschwalbe*, German; *Zandzwaluw*, Dutch; *Diigsvale*, *Sandsvale*, Danish; *Strandsvala*, *Jordsvala*, Swedish; *Strandsvale*, Norwegian; *Rantapääsky*, *Törmäpääsky*, Finnish; *Lastochka-semliannaya*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 345. fig. 2; Werner, Atlas, *Chélidones*, pl. 4; Kjærb. Orn. Dan. taf. xiv.; Frisch, Vög. Deutschl. taf. 18; Fritsch, Vög. Eur. taf. 24. figs. 1, 2; Naumann, Vög. Deutschl. taf. 146. figs. 1, 2; Sundevall, Sv. Fogl. pl. xvii. fig. 7; Gould, B. of Eur. pl. 58; id. B. of G. B. ii. pl. vii.; Schlegel, Vog. Nederl. pl. 59; Roux, Orn. Prov. pl. 148; Audubon, B. of Am. pl. 50.

Ad. corpore suprà fuscescenti-murino, pileo paullo saturatiore: remigibus et rectricibus nigro-fuscis: caudâ forficatâ: gulâ, pectore imo, abdomine et crisso albis, pectore superiore et hypochondriis fuscescentibus: rostro nigricanti-brunneo: iride brunneâ: pedibus brunneis.

Juv. adulto similis, sed corpore suprà brunnescentiore, plumis fere omnibus fulvido marginatis, mento ferrugescente cervino lavato, et gulæ lateribus eodem colore vix lavatis.

Adult Male (Hampstead, 15th May). Upper parts dark hair-brown or mouse-brown, slightly darker on the crown and lighter on the rump; quills and tail-feathers blackish brown, the latter and the secondaries with almost imperceptible lighter margins; throat, abdomen, and under tail-coverts pure white; sides of the head, breast, flanks, and under wing-coverts dark hair-brown; region round the eye rather darker than the rest of the face, and a blackish brown spot in front of the eye; beak blackish brown; iris dark hazel; legs dark brown. Total length about 4–7 inches, culmen 0·3, gape 0·55, wing 3·95, tail 3·15, tarsus 0·45, tail forked, the outer rectrices 0·35 longer than the central ones.

Female. Resembles the male, except that the band across the breast is not so broad or dark, and that the white extends further down the throat.

Young, just fledged (Washington). Resembles the adult, but has the upper parts browner, and most of the

feathers, especially the secondaries and upper tail-coverts, margined with fulvous; chin washed with pale rusty buff, and the sides of the throat slightly tinged with the same colour.

The present species has an extremely wide range, being found throughout Europe, Asia, Northern Africa, and America, as far south as Brazil.

In Great Britain it is common during the summer season throughout the country in suitable localities, and is found even on the outer islands off the coast of Scotland. Mr. Robert Gray (B. of W. of Scotl. p. 209) says that "it is a regular summer visitant to Lewis, Harris, and North Uist, breeding in sand-banks of the western side of these islands. It also inhabits South Uist and Barra, but I have not seen it on Benbecula, which probably does not furnish suitable banks for a bird of its mining habits." In Ireland it is a regular and common summer visitant wherever there are banks suitable for the purpose of nidification.

I do not find it recorded from the Færoes; but it is a common summer resident in Scandinavia. Mr. R. Collett says that "it breeds from Southern Norway up to the Russian frontier, north of the Polar Circle, and along the west coast it is one of the commonest species. It breeds up in the birch-region in the fells both on the Dovre and in Ronderne." In a note to hand just as the present article is going to press he tells me it arrives in Norway about the middle of May, and leaves again early in September. In the Gudbrandsdal and Osterdal he found them breeding in the roofs of houses, which are there frequently made of turf, into which the Martins had burrowed, though many other more suitable localities for the purpose of nidification were close at hand. Pastor Sommerfelt says that it is "not common on the Varanger fiord, but breeds in several localities, as, for instance, at Seida, on the Tana river, at Nuorgan, in Polmak, and at Oxevandet;" and he thinks that of latter years it has increased in numbers. Nilsson says that it is numerous throughout Sweden up into the Polar Circle, arriving rather later than the common Swallow, about the end of April, and leaving in August or early in September. In Finland it occurs in most parts of the country, being met with most frequently on the banks of the larger rivers; but I seldom observed it in the southern portions of the country. In Russia it is common. Messrs. Alston and Harvie Brown found large colonies breeding near Archangel. Meves met with it at Schlüsselburg, Novaja Ladoga, Onega, Archangel, &c., everywhere common; and Sabanäeff informs me that it is generally distributed throughout Central Russia in suitable localities, and, along the Ural range, found at least up to 58° N. lat., and even higher on the Kama; but on the south-eastern slopes it is rarer. In Poland, the Baltic Provinces, and Germany it is common, but, according to Borggreve, it is not found high up in the mountains. In Denmark, Holland, Belgium, and France it is, as elsewhere, tolerably widely distributed during the breeding-season, and breeds as far south in France as Provence. Professor Barboza du Bocage does not include it in his list of the birds of Portugal; but Dr. E. Rey (J. f. O. 1872, p. 143) often saw it at Algarve in that country, as also at Rapozeiro, at the foot of the Sierra Figueira. In Spain it is said to be tolerably common, and generally distributed during the summer season, but leaves during the winter. Mr. Howard Saunders (Ibis, 1871, p. 205) found it nesting in the banks of the Guadalquivir in May; and Mr. A. von Homeyer says (J. f. O. 1862, p. 254) that he found a colony of about twenty pairs breeding near Alcudie, in the Balearic Isles. In Italy it is numerous in the summer. Mr. A. B.

Brooke says that it arrives in Sardinia early in March; and Malherbe states that the larger portion of those which pass Sicily in the spring are seen in April. Numbers, he says, breed in the marshes of Catania and Syracuse; and he further states that many remain in Sicily over winter; but this last statement is called in question by Professor Doderlein. The late Captain R. M. Sperling (Ibis, 1864, p. 283) speaks of it as being common during migration at Malta; but Lord Lilford says that it did not appear to be common in Epirus. Both Lindermayer and Von der Mühle speak of it as being a summer resident in Greece; and the latter says that colonies breed in the banks of the Alpheus and Eurotas, and that it migrates southward very early in the autumn, even earlier than the House-Martin. Dr. Krüper informs me that he found it breeding in Macedonia in the banks of a brook below Olympus. In Southern Germany it is common in suitable localities; but, according to Dr. Anton Fritsch, it is rather rare in Bohemia, the river-banks being so rocky that it finds but few suitable places for nidification. The Ritter von Tschusi-Schmidhofen informs me that "it breeds throughout Austria in suitable localities, being most common in the banks of the Danube, below Presburg, where there are the largest colonies I have ever met with." Messrs. Elwes and Buckley found it common in Turkey in summer; and Von Nordmann speaks of it as being widely distributed throughout Southern Russia, and says that vast numbers breed in the steppes of Bessarabia. It is found in Asia Minor; and Canon Tristram says (Ibis, 1859, p. 27), "it is abundant in the sandy banks on the left side of the Jordan. I may mention in passing that I have found the Sand-Martin breeding in Egypt in February. Is it not therefore probably double-brooded?" It is common in Northern Africa during migration; and Captain Shelley (B. of Egypt, p. 124) says that it "arrives in Egypt in great abundance in March, and towards the end of April commences breeding in colonies in the banks by the river-side." Messrs. Finsch and Hartlaub (Vög. N.O.-Afr. p. 147) say that it is found in Egypt, Nubia, the Red Sea, and Zanzibar, and they consider that the various notes on its breeding in Africa must be referable to *Cotyle minor*; but certainly Captain Shelley's specimens are true *C. riparia*. In North-western Africa it is found in Algeria, where, according to Loche and Mr. A. von Homeyer, it breeds, but is not common. Mr. O. Salvin observed it between Tunis and Kefs late in March; and Canon Tristram (Ibis, 1859, p. 434) observed "a few at El Aghouat in November. They did not appear to winter in the Sahara, and can only, I imagine, be stragglers there at any time, as the weds and oases afford them but few conveniences for nidification." Mr. C. F. Tyrwhitt Drake (Ibis, 1867, p. 425) does not believe that it remains to winter in Tangier or Eastern Morocco. Mr. Godman does not include it in his list of the resident and migratory birds of Madeira and the Canaries; but it straggles there, as I find in his collection a single specimen he obtained at Teneriffe.

To the eastward the Sand-Martin occurs right across the continent of Asia. De Filippi found it plentiful near Mianeh, in Persia; and Mr. Blanford also brought back a specimen from Persia. Severtzoff says (Turk. Jevotnie, p. 67) that it rarely visits the north-eastern portions of Turkestan, and has never been seen in the south-eastern districts, but elsewhere it is common and breeds numerously. In the mountains it occurs as high as about 3500 feet. In Siberia it is common. Middendorff observed it near Udskoj-Ostrog. Dr. Radde, who met with it in South-eastern Siberia, says (Reis. im Süd. von Ost-Sib. p. 281) that it arrived at Tarei-nor about the 16th May, and in the Bureja Mountains made preparations to leave about the 22nd August,

none being observed later than the 30th of that month. On the Upper Amoor it was common about 150 to 180 versts from the Chingan Mountains; and Dr. L. von Schrenck (Reise, Amurl. p. 389) says that he found it common on the Amoor, where numbers breed, but not in such large colonies as are seen in Europe, or as Pallas saw on the Irtysh. Both Dr. Radde and Dr. Schrenck say that specimens obtained by them agree precisely with European examples. It appears to winter in India, where, however, it is rare. Dr. Jerdon (B. of I. i. p. 163) says that he "got specimens at Jaulna, and saw it occasionally at Mhow and Saugor, as also in two or three localities on the Ganges, but very few (generally only one or two) together, in company with the common Swallow, and always near water." Mr. Blyth mentions it from the banks of the Sutlej. Adams says that it is common on the Indus and the rivers of the Punjab. Griffith also procured it in Afganistan, and says that "it frequents rivers and sand-banks, and has a loud harsh voice, with the same intonation as the Black Partridge. It is only a winter visitant to India;" and he further writes (Ibis, 1871, p. 353), "Mr. Blanford recently procured it in Central India; and I have on several occasions seen one or two birds of this species in the upper provinces of India; but it is certainly somewhat rare throughout India." Mr. A. O. Hume remarks, however (Stray Feathers, i. p. 164), that he has never seen an India-killed specimen of this bird. It occurs in China; and Mr. Swinhoe says that it is found at Pekin in summer. He also says (Ibis, 1861, p. 328) that "it was very common about the marshes at Takoo, often perching on the ground, apparently to take rest and preen itself. In the plain before Tientsin thousands of this species, in company with large parties of the two foregoing, swarmed the air during the warm days of September, engaged in catching the numerous flies that haunted the camp."

On the American continent it is widely distributed. Professor Baird (N. Am. B. i. p. 352) gives its range as "the whole of North America, Bermudas, Greater Antilles, Costa Rica, and Western Brazil," and further says that "it is common throughout North America in the summer, and probably winters in Mexico, and in Central and South America, though it is not mentioned by Sumichrast as a bird of Vera Cruz. Mr. Salvin obtained several specimens at Dueñas, Guatemala, in September 1861, having previously observed it about the Lake of Yzabal. Mr. Dall met with this species in Alaska, in favourable situations, in immense numbers. He counted on the face of one sand-bluff over seven hundred nest-holes made by these birds, and all of them apparently occupied, so that the bluff presented the appearance of an immense honeycomb alive with bees. It has not been observed in Greenland; but Richardson found it in colonies of thousands at the mouth of Mackenzie River, in the 68th parallel." Its range extends far south in America. I found it common in Texas, and observed the first arrivals in the spring at Eagle Pass on the 20th February. As above stated, it occurs in Mexico and Costa Rica. Natterer found it on the Rio Negro; Sclater and Salvin record it from the Amazon; and Von Pelzeln (Orn. Bras. p. 18) speaks of it as being found at Caiçara in about 15° S. lat. I may further add that Gundlach obtained it in Cuba.

The Sand-Martin, or Bank-Swallow, is, as above stated, met with only during the summer season in Europe proper, and there appears to be no undoubted instance on record of its wintering in the countries north of the Mediterranean. It arrives in Great Britain late in April or early in May, and immediately proceeds to prepare its nest and commence breeding.

It does not frequent cities or localities which are densely inhabited by man, but resorts to more lonely and sequestered spots, keeping, however, in view the nature of the soil, as there must always be a sand bank or some equally suitable place in the neighbourhood where it can burrow out its nest-hole. I have found Sand-Martins breeding in soft loam banks in large sand- and gravel-pits; and they are said to burrow their holes in clay banks, but they are most frequently met with on the banks of rivers, or anywhere along the water-side where suitable banks are found. They are extremely social, and usually nest in large colonies, the nests being close to each other. I found a vast colony in the steep banks skirting the Luleå river, in Northern Sweden, and have seen large communities nesting in various parts of England and Scandinavia. It flies, like all its allies, with ease and grace, gliding along, wheeling sharply every now and then to catch a passing insect, now rising perpendicularly, now sweeping swiftly down wind, or curving along the face of the bank or cliff, and following the formation of the cliffs. They do not brook an intruder in their nesting-colonies, but join together and drive off all intruders, even Hawks, Crows, &c.; but occasionally a Sparrow takes possession of one of their nest-holes, and is able to maintain his position in spite of continuous efforts on the part of the Martins to dislodge him. The Sand-Martin excavates its own nest-hole; and Mr. R. D. Duncan gives in Macgillivray's 'British Birds,' iii. p. 601, some excellent notes on the mode in which the hole is excavated, which I may transcribe as follows. "It is," he says, "extremely pleasant to observe the process of burrowing, and it is by no means difficult to enjoy a view of their operations. Taking with me a small telescope or opera-glass, I seated myself at a little distance, on the oppposite bank, early on a warm morning in May. The Swallows, noway molested by my presence, continued at intervals to excavate their nests. Grasping the perpendicular surface of the bank with their claws, and steadying themselves by means of their tails, they commenced working by pricking a small hole with their bills. This hole they gradually enlarged by moving round and round, and edging off the sand with the side of their bills, which they kept shut. Their progress at first was slow; but after they had obtained room to stand in the excavation they proceeded very rapidly, working within with their bills, and carefully pushing out the loosened sand with their feet; at one time the male, at another the female was the excavator. When their burrowing was impeded by the resistance of a stone or any other obstruction, if unsuccessful in their efforts to remove it, they left the cell and commenced digging a new one. They engaged in these exercises only for a short time each morning, as they abandoned themselves to enjoyment throughout the day. The nests were placed at the end of the cells, the depth and direction of which varied much. Some extended three feet, others only a sixth of that distance; some were horizontal; some descended nearly perpendicularly for a little and then rose again; while others turned in many directions. In all, however, the nest was a little elevated above the entrance of the cell. This provision was evidently to facilitate the egress of moisture. The materials of the nest were uniformly a few straws of hay and many whitish feathers very carelessly thrown together. . . . . After the young leave the nest they are fed by the parents on the wing. This feat is performed so suddenly as almost to be imperceptible; and the parents in the act appear as if teaching the young to fly. Being desirous to ascertain the average number of insects destroyed daily by a brood of Swallows, I took my station on a summer morning opposite four young individuals, which were sitting on a ledge of earth, near

the abandoned nest, enjoying themselves in the rays of the rising sun. Around them the parents were silently engaged in capturing their little prey, which had been roused into life by the new dawn. The male and female both took part in this exercise, although the latter seemed more attentive, and supplied the young more frequently, than the former. One or other carried food to them at least every five minutes. I suppose they were thus engaged for ten hours each day, the case admitting of a calculation of about 6000 noxious insects being destroyed by one small brood in a day. This calculation is perhaps much below reality; but even looking at the subject from this point of view, we find that the destruction of these beautiful birds would be productive of pernicious results. Thus, while the rapidity of its flight enables the Swallow to capture these insects with facility, nature, ever provident, may have bestowed upon it this property that it may also be better able to elude the movements of its enemies, and thus be spared to preserve the atmosphere, to a certain extent, in a state of purity."

Mr. Cecil Smith, writing from Taunton, Somersetshire, informs me that it is there "a very numerous summer visitant, occasionally making its appearance in the last week in March, but sometimes not till the first week in April. One year a flock of about fifty pair took up their abode in my quarry; and as there was not much work going on in the quarry at the time, they excavated the holes for their nests in the soft ground above the stone, and successfully reared their families; the next year they returned to the same place, but had to dig their holes again, as the earth had been removed. This year they had not quite such a pleasant time, as there was more work going on in the quarry, and carts constantly coming and going, and the rock was occasionally blasted with gunpowder. However, they did not seem to mind the interruption, and brought up their families as before. The next year the earth in which they had made their holes was being taken away just at the time the Martins first arrived; so they betook themselves to other quarters. When the earth was being taken off a pair of Robins were found to have taken possession of one of the Sand-Martin's holes, and had already laid three eggs in it. Many of the Sand-Martins have a second brood; and the young birds are not yet (August 10th) flown, as I constantly see the old ones going in and out to feed them. These late young have not very much time to prepare for their migratory flight, as they all leave us about the middle of October."

The food of the present species, like that of the other Swallows, consists entirely of insects, chiefly of the smaller kind, such as gnats &c.; and it may frequently be seen to pick an insect off the surface of the water as it skims along its surface, as it often does; indeed, as a rule, the Sand-Martin does not fly so high as the common Swallow. Its note resembles that of the common Swallow, but is not so loud and is more feeble. It is a rather harsh note, resembling the word *share* or *scheer*; and during the spring the male somewhat modulates this note into a sort of song, if such it can be called.

The nest of the Sand-Martin, which is placed at the end of the nest-hole, is composed of grass-bents and straws, is loosely put together, and is generally lined somewhat sparingly with feathers. The eggs, usually four or five in number, are oval, elongated, pure white in colour; and a series in my collection measure from $\frac{38}{40}$ by $\frac{20}{40}$ to $\frac{38}{40}$ by $\frac{21}{40}$ inch in size.

The specimens figured are an adult male from Hampstead and a nestling from near Washington, in the United States, these being the specimens described and in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Hampstead, near London, May 15th, 1870 (*Davy*). *b*. Pagham, Sussex, April 23rd, 1870. *c*, *d*, *e*, *juv*. Pagham, August, 1869 (*R. B. Sharpe*). *f*, ♂, *g*, ♂. Cookham, Berks, May, 1869. *h*, ♀. Cookham, July 6th, 1869 (*Briggs*). *i*, ♂, *k*, ♀. Piedmont, April and May, 1870 (*Salvadori*). *l*. Seville, Spain, May 2nd, 1871 (*H. L. Irby*). *m*. Niagara Falls, U. S. (*J. Gould*). *n*, *juv*. Near Washington, D. C., August 14th, 1861 (*Dr. E. Coues*).

E. Mus. G. E. Shelley.

a, ♂. Egypt, April 1st, 1868. *b*, ♀. Egypt, February 27th, 1868 (*G. E. S.*). *c*, *juv*. (one of the types of *H. littoralis*). Egypt (*Hemp. & Ehr.*).

E Mus. Salvin & Godman.

a. Hampstead, Middlesex. *b*, *juv*. Upware, Cambridgeshire, August 17th, 1856 (*O. Salvin*). *c*, ♀. Orotava, Teneriffe, April 23rd, 1871 (*F. D. Godman*).

E Mus. H. B. Tristram.

a, ♂. Greatham, Durham, May 1871 (*H. B. T.*).



CRAG MARTIN.

COTYLE RUPESTRIS

237

COTYLE RUPESTRIS.

(CRAG-MARTIN.)

Hirundo rupestris, Scopoli, Ann. I. Hist. Nat. p. 167. no. 253 (1769).
Hirondelle grise des rochers, Montbeill. in Buffon's Ois. vii. p. 300 (1783).
Hirundo montana, Gm. Syst. Nat. i. p. 1019 (1788).
Chelidon rupestris, Boie, Isis, 1822, p. 550.
Cotyle rupestris, Boie, Isis, 1826, p. 971.
Biblis rupestris (Scop.), Less. Compl. à Buff. viii. p. 495 (1837).
Hirundo rupicola, Hodgs. in Gray's Zool. Miscell. p. 82 (1844).
Hirundo inornata, Jerd. Suppl. Cat. 263 *bis*; B. of India, i. p. 166 (1862).

Hirondelle de rocher, *Hirondelle de montagne*, French; *Andorhina das rochas*, Portuguese; *Golondrina de rocas*, *Rondine montana*, *Rondine marina*, Italian; *Huttafa*, *Haniefa*, Maltese.

Figuræ notabiles.

Werner, Atlas, *Chelidones*, pl. 4; Fritsch, Vög. Eur. taf. 24. fig. 6; Naumann, Vög. Eur. taf. 146. figs. 1 & 2; Gould, B. of Eur. pl. 56; Roux, Orn. Prov. pl. 142.

ad. suprà pallidè brunnescenti-murinus, pileo saturatiore: alis et caudâ saturatè fuscis, secundariis et tectricibus alarum vix pallidiore marginatis: rectricibus, duabus centralibus et lateralibus exceptis, in pogonio interno versus apicem maculâ ovali notatis: corpore imo subtùs pallidè brunneo: gulâ, gutture et pectore sordidè albidis, gulâ brunneo striatâ: abdomine vix rufescente lavato; subcaudalibus sordidè brunneis, vix pallidiore vel albido marginatis: subalaribus saturatè brunneis: rostro corneo: pedibus brunneis: iride brunneâ.

Juv. adulto similis sed corpore suprà saturatiore, dorsi plumis et scapularibus rufescente marginatis, secundariis albido conspicuè marginatis.

Adult Male (Mentone). Upper parts light mouse-brown, rather darker on the head; wings and tail dull brown, secondaries and wing-coverts with very narrow, almost imperceptible, light edgings; all the rectrices, except the two central and the outermost tail-feather on each side, with a large oval white spot on the inner web, which is only seen when the tail is spread; throat and breast dirty white, with a few dull brown streaks on the chin and upper part of the throat; rest of the underparts dusty brown, like the back, but slightly washed with rufous brown; under tail-coverts rather darker brown, very slightly edged with light brown or dirty white; under wing-coverts dark brown; tail slightly forked; bill dark horn; feet brown; iris dark brown. Total length 5·5 inches, culmen 0·48, wing 5·25, tail 2·25, tarsus 0·45.

Adult Female (Sardinia). Undistinguishable in plumage from the male.

Young Male (Macedonia, October 6th). Differs from the adult bird in being rather darker on the upper parts, the feathers on the back and scapulars edged with dull rufous; secondaries distinctly edged with white, and upper tail-coverts margined with dull white; underparts rather duller than in the adult bird.

The Crag-Martin or Rock-Swallow is only found in the lower central and southern portions of Europe, in North Africa, Central Asia, and India, being found as far to the east as Northern China. In France it is common in the southern provinces, more especially in the rugged mountainous districts of South-eastern France; and Professor Barboza du Bocage refers to it as being common in Portugal. In Spain it is, according to Mr. Howard Saunders (Ibis, 1871, p. 205), "resident throughout the year, frequenting rocks and old ruins, also modern edifices, provided they are perched on the edge of a crag. A colony which frequented a gorge of the Segura were only to be seen between twelve and one each day. I shot a female, with the breast bare, on the 29th March; but a whole week's observation did not enable me to find their nesting-place." Major Irby informs me that it breeds at Gibraltar, and that during the winter numbers come down to the low ground and remain there until the spring, when they disappear; and Lord Lilford also met with it in the rugged mountains of Spain, and records it as common amongst the peaks of the Sierra.

Bailly says that it is common in Piedmont, in the Dauphiné, and in several of the Swiss valleys. In Savoy it is common in the spring, principally near Chambéry, and in the rocks along the banks of the Rhône and those at Saint-Genix, Yenne, on the shores of Lake Bourget, from the castle of Bordeaux to the monastery of Hautecombe, in which latter locality it breeds in the monastery buildings. He further states that it occurs generally throughout Savoy in rocky mountainous localities, especially near lakes and rivers. Mr. J. Traherne Moggridge (Ibis, 1863, p. 159) met with it at Mentone during the winter. According to the best Italian authorities it is generally distributed throughout Italy, Sicily, and Sardinia, and to a certain degree it is resident in most parts throughout the year, although a good many individuals appear to go further south, and return early in spring. From its presence in winter being frequently accompanied by bad weather, it is known by the sportsmen of Palermo as *Rinnina di malu tempu* and *Rinnina d'invernu*. Count Salvadori writes (J. f. O. 1865, p. 131) that "it is a resident in Sardinia. Its name of *Rondine marina* may be derived from the fact that it frequents caves near the coast. I saw it in January about the Grotta du Colombei. It is also met with in the interior. I observed many inhabiting the cave of Oridda, near Domus Novas, and also in the rugged rocky mountains. In the beginning of April I saw some at Mount Ogliastra, near the Flumendosa, and later (about the middle of April) near Capoterra, at a creek, where they were collecting some clay for building their nests. I do not know any thing at all about their visiting the towns, which, as Cara states, positively takes place after the other Swallows have left." Schembri refers to it as rather common in Malta during the two seasons of migration; but Mr. C. A. Wright has only obtained it there on a few occasions. He writes (Ibis, 1864, p. 292) as follows:—"My first acquaintance with *H. rupestris* on these islands was in December last, when spending a day in Gozo. There were several of them flying over the town and along the fronts of the houses in the streets, and round the ditch of the old fortifications, which is used as

a fruit- and vegetable-garden. The day was cold, but clear. On revisiting the island about a month afterwards, on the 26th January, I again met with them the first thing on landing. On neither occasion was any other species to be seen, nor do any of the Swallows or Swifts generally winter here. Again, at the interval of about another month (on the 20th of February), I observed a specimen in the Malta market." He also gives (Ibis, 1865, p. 464) the following memorandum from Dr. Leith Adams, dated Gozo, February 22nd:—"A pair of Rock-Swallows have been sporting about the fort and sunny side of the square all day. February 23rd.—Weather very cold; even snow fell to-day at the Giant's Tower; but nevertheless I saw a flock of some ten Rock-Swallows sporting about in the gorge of Schlendi and around the cliffs to the westward. I have noticed this Swallow about Rabato in summer, but have not been able to confirm its identity till yesterday. I think, perhaps, individuals remain throughout the year in Gozo." Lord Lilford met with it in the Ionian Islands, where it is, he writes (Ibis, 1860, p. 234), "common and resident in Epirus, haunting the high and precipitous mountains of the interior in summer, and coming down to the coast in the winter months."

Lindermayer says that it is resident in Greece, inhabiting in the summer the rocks and mountains, and descending to the plains during the winter, when they are met with in the swamps and the plains near the coast; and Mr. Seebohm, whose notes on its habits will be found below, speaks of it also as resident in Greece. Dr. Krüper writes (J. f. O. 1860, p. 282) that it is much rarer in Greece than *H. urbica* and *H. rustica*, and about equal in numbers to *H. rufula*. He first saw it in 1858, when exploring the Klissura, where in a precipice, amongst Jackdaws, Rock-Doves, Swifts, and Martins, a single pair had a nest. In the summer of 1859 he repeatedly found its nest in the Parnassus, and describes it as resembling that of *H. rustica* in mode of construction, being open above, but much smaller in size. He found one nest in a small cave in the rock, in which a Chough had a nest, and was feeding her young. Dr. Krüper says that all the naturalists assured him that it is a resident in Greece, but he himself never saw it in the winter. He found two breeding-places of this bird in Naxos, but speaks of it as rare there. It is found in the mountains of Austria; and the Ritter von Tschusi Schmidhofen (J. f. O. 1870, p. 263) says that he observed it on the western shores of the Garda lake, near the town of Riva; Mr. A. Rindfleisch observed six or eight at the "Engelswand," between the villages of Oetz and Umhausen, in September 1853, and also saw it at the Martinswand, near Innsbruck. Mr. Luigi Althammer, in his list of the birds of the Tyrol, speaks of it as arriving later and leaving earlier than *H. rustica*, breeding in the most precipitous places; and, according to Bruhin, it breeds annually in the Vorarlberg, close to the "Hängender Stein," near Bludenz. Von Tschusi Schmidhofen further states (Ibis, 1872, p. 136) that two years subsequently to the time he met with it on the Garda Lake, as above recorded, he found its nest in the same locality. I possess no information as to its occurrence in Turkey or Southern Russia, except that Von Nordmann refers to it as inhabiting the coasts of the province of Ghouriel, and thinks it probable that it may occur in the Crimea.

Mr. Seebohm and Dr. Krüper found it tolerably common in Asia Minor; and Canon Tristram met with it in Palestine, where it is, he says (P. Z. S. 1864, p. 443), "a permanent resident in the wadys adjoining the Ghor, and in the deep ravines of the Litany River. Very

numerous wherever found." He further states (Ibis, 1859, p. 27) that "it is not unfrequent in the barren gorges of the Kedron, near the Dead Sea, where I found it breeding at the end of March, and obtained specimens. I have observed, both in the Atlas range and in Palestine, that it is by no means gregarious, each pair keeping a range of territory to themselves, though the bird occurs from one end of the pass to the other." The records of its occurrence in North-east Africa are somewhat conflicting. Captain Shelley says that he never saw an Egyptian specimen, and is very sceptical as to its ever having been found in that country. Von Heuglin includes it on the authority of Brehm, who (J. f. O. 1853, p. 452) speaks of it as very rare in Egypt. All the Egyptian Crag-Martins I have seen were *Cotyle obsoleta*, Cab., which species is, I should say, alone found in that country; but there is no doubt that *Cotyle rupestris* occurs in the Abyssinian highlands. Mr. Blanford (Geol. & Zool. of Abyss. p. 350) speaks of it as being "a very common bird in the mountain-passes, and found almost from the sea-level to 8000 feet. A specimen from Senafé differs in no respect from others brought from Southern Europe. Singularly enough a single specimen obtained by Mr. Jesse appears to belong to a small variety of the southern form, *C. fuligula*, Licht. I probably saw both. Heuglin only gives *Cotyle obsoleta*, Cab., a paler form, as common in Abyssinia. If I obtained either of the other species I have overlooked them." There can be no doubt that Mr. Blanford's specimen belongs really to the present species, as I have carefully compared it with European examples and can detect no difference either in size or coloration. The Crag-Martin is resident in North-western Africa; Major Loche says that it breeds in the gorges of Chiffa; and Malherbe records it as abundant at Bona, but otherwise not common in Algeria. Mr. J. H. Gurney, jun., who also obtained specimens near the ravine of Chiffa, remarks that he noticed a considerable difference in size. Mr. Taczanowski (J. f. O. 1870, p. 39) says that it is the only species of Swallow found during the winter in the mountains near the desert. They were often seen at Elkantara and El Outaja, flying about in the fields, and also in the oases of Biskra, Seriana, and Sidi-Okba, but they did not remain there for long. Mr. T. H. Chambers-Hodgetts also met with it in Tripoli at Turhona.

To the eastward it has been met with as far as Northern China. De Filippi observed it at Demavend and at Bender Abbas. Ménétries (Cat. Rais. p. 45) records it from the mountains of Talyche, near Zouvant, in the Caucasus, where it breeds; and Mr. Blanford informs me that he "met with it in several places on the Persian highlands during the summer: it kept about the crags at a considerable elevation." I found it, he says, "breeding on June 29th in a ruined caravansarai at Dehgirdú, 8000 feet above the sea, on the road between Shiraz and Isfahán. It was common in the Elburz mountains, in Northern Persia. In Baluchistan I only found *C. obsoleta*." Severtzoff says that it occurs throughout Turkestan, except in the north-eastern portion, and he found it breeding near Chu, Tallas, Susamir, on the lower Narin, Caratan, in the western part of the Thian-shan mountains, and along the course of the Syr-Darja, at an altitude of from 5400 to 10,500 feet, though at the latter altitude it is rare. In localities at an altitude of about 3000 feet it occurs only during migration. I do not find it recorded by any of the Siberian travellers; but Dr. Henderson, who obtained it on the Yarkand expedition, says (Lahore to Yarkand, p. 177) that 'it was often seen; it was not uncommon near Sanju, was met with

both going and returning on the banks of the Indus near Lé, and was numerous about Drás.'" To this Mr. A. O. Hume adds, that "in all these localities, as well as on many of the higher hills south of the snowy range, it seems to a great extent to be a permanent resident, not at any rate migrating *en masse* from the country, but as a rule, only retreating lower down the valleys in the cold weather—some few, however, during the latter season being met with in the higher hills of Central India and Rajpootana. On the Neilgherries there appears to be a permanent resident colony." Dr. Jerdon (B. of Ind. i. p. 166) says that he "only saw it on the summit of the Neilgherries, and at Darjeeling, occasionally in large flocks, at other times in small parties, and only in the cold weather. At Darjeeling they seemed to be birds of passage entirely, as I saw them in October in immense numbers for a few days, and subsequently they had entirely disappeared." In his supplementary notes to the above work (Ibis, 1871, p. 353) he adds that he "observed it in the valley of the Sutlej, and in the Sind valley of Kashmir. Mr. Blanford found it in Central India flying round a rocky hill, at no great elevation, and also at Khandalla on the edge of the western Ghats." Mr. Hodgson records it as common in Nepal; and Herr von Pelzeln (Ibis, 1868, p. 307) speaks of it as occurring in "Thibet, the Himalayas, Kotegurh." Mr. Swinhoe, in his notes on the birds of China (P. Z. S. 1871, p. 347), states that it is "common in the mountains about Pekin. Père David says that in winter many are found together in caverns in a torpid state, and that these on mild days recover from their sleep and fly about over the rocks in the open."

I have never had an opportunity of personally watching the habits of the present species at its breeding-haunts, and am indebted to my friend Mr. H. Seebohm for the following notes on its nidification and habits:—"*Cotyle rupestris* ought rather to be called the Cave-Swallow, than the Crag-Swallow or Rock-Martin, if its name refers to its choice of a breeding-station. *Hirundo urbica* is the Rock-Martin *par excellence* in Greece, building its familiar nest on the limestone crags in large and small colonies. So far as I know, *Cotyle rupestris* always chooses a cave, with which Greece and Asia Minor abound. In both these countries it is a resident bird, frequenting, Dr. Krüper tells me, the plains and the sea-side in winter. In summer it goes into the mountains to breed; but Von der Mühle and Lindermayer are certainly wrong in saying that it is only seen in the *high* mountains at this season of the year. We never once met with this bird in the pine-regions of the Parnassus. Below the pines come some two thousand feet of rock and grass before you get into the olive- and vine-valleys. In this region we only found it very low down, in the most sheltered situations, in the mountain-gorges a short stroll above the level of the vines. These mountain-gorges, like all other limestone districts, abound in caves, which are the favourite breeding-places of this Swallow. On the 10th of May, 1873, I had an excellent opportunity of watching a score or more of these birds hawking for flies on a sunny spot in a deep mountain-gorge in the Parnassus. The sun was shining brilliantly after a heavy storm of wind and rain. The birds were very tame, and my sitting down on a rock in the midst of them to watch their movements did not appear to disturb them in the least. Their style of flight reminded me very much of that of a butterfly or a bat—a sort of irresolute flutter, very unlike the rapid darts of the true *Hirundo*. They seemed also occasionally to require rest, often perching on the branches of a fallen oak not far from the rock on which I was sitting. They

are remarkably silent birds. The only note I heard was an occasional *ch* or *chch*, scarcely likely to attract the attention of any one not listening for it. When I repassed the spot a few hours afterwards not a bird was to be seen. Whenever we descended low enough down into the valleys we met with these birds, but could not discover the least trace of their breeding. In the mountain-gorges were numerous caves, into which we sometimes saw them fly; but it was not until the 16th May, at Beliza, that we saw any signs of their having begun to build their nests. This little village is built at the entrance of one of the most picturesque gorges in the Parnassus. I strolled out one morning up the gorge, and had not left the village more than five minutes when I espied a group of Swallows on the ground, round a puddle in the mule-track. I shot into the middle of them, and picked up three specimens of *Hirundo rufula* and one of *Cotyle rupestris*. They had evidently commenced to build, as their beaks were full of mud, which they had gone to the puddle to collect. When Dr. Krüper passed through the village a fortnight later *Cotyle rupestris* had fresh eggs; but very few nests contained the full complement. It is a very unusual thing for a non-migratory bird to breed so late; and it has been suggested by my friend Mr. Howard Saunders, in his interesting papers in 'The Field' on the ornithology of Spain, that the June nests of this bird are for a second brood. I have not, however, nor has my friend Dr. Krüper, been able to find the least evidence in Greece in favour of this theory. In Asia Minor in 1872 I met with this bird, breeding in exactly similar localities, at about the same elevation, in the last week in May. Although more or less gregarious when in search of food, they are not so much so in their nesting-habits, and you seldom find more than one or two nests in the same cave. It is a very common thing to see a solitary bird perched for some time upon a ledge in the cave. They prefer those which are lofty, and build near the roof, attaching the nest to the rock immediately below an overhanging projection, but not quite touching it, exactly as *Hirundo rustica* does when it builds against a perpendicular surface. The nest resembles that of the last-mentioned bird in similar positions, being a shallow cup of mud, open at the sides; but it is scarcely so large in size. It is lined with wool, thistle-down, and feathers. The eggs, five or six in number, exactly resemble pale varieties of the eggs of *Hirundo rustica*. The ground-colour is pure white, generally profusely spotted, especially at the large end, with pale greyish brown. Very rarely the spots are irregularly round in shape. They are usually an irregular oval, sometimes running into streaks. The underlying spots are very few and indistinct."

The food of the Crag-Martin consists exclusively of insects. Its note is said to differ altogether from that of any other Swallow; and when Dr. Krüper first heard it he thought it proceeded from some species of Finch. Its flight is swift and light; and when it is found living in a colony of House-Martins it is much bolder than they are, and approaches close to an intruder. I have several eggs of the present species from Switzerland, obtained through Mr. Fairmaire, which resemble the eggs of *Hirundo rustica*, but are a trifle smaller in size, and have the spots smaller, duller and paler in tinge, and not so clearly defined. In size they measure $\frac{65}{80}$ by $\frac{46}{80}$ inch.

The specimens figured are an adult bird on the right-hand side and a young bird on the left, they being the specimens described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Mentone, 1865 (*Fairmaire*). *b*, ♀. Andermatt, June 1862 (*Nager-Donazians*). *c*, ♀. Sardinia, February 1863 (*Salvadori*). *d*, ♂ *juv.* Olympus, Macedonia, October 6th, 1869 (*Dr. Krüper*). *e*. India (*Fairmaire*).

E Mus. Brit. Reg.

a, *b*, ♀. Jericho (*H. B. Tristram*). *c*, *d*. Abyssinia (*C. Harris*). *e*. Tigré, Abyssinia, 7500 feet alt., February 22nd, 1868 (*W. T. Blanford*). *f*. Nepâl (*Hodgson*). *g*. Madras (*Jerdon*).

E Mus. Howard Saunders.

a, ♂, *b*, ♀. Archena, March 29th, 1868 (*H. S.*). *c*, ♂. Sierra Nevada, January. *d*, ♂, *e*, ♀. Malaga, November and December. *f*, ♂. Tangiers, April. *g*, ♀. Genoese Riviera, December 1869.



PALE CRAG-MARTIN.

COTYLE OBSOLETA

281

COTYLE OBSOLETA.

(PALE CRAG-MARTIN.)

Cotyle rupestris, Rüpp. Syst. Uebers. p. 22 (1845, nec Scop.).
Cotyle obsoleta, Cabanis, Mus. Hein. i. p. 50 (1850).
Cotile cahirica, A. E. Brehm, Journ. für Orn. 1853, p. 452.
Cotyle palustris, Tristram, Ibis, 1867, p. 363 (nec Steph.).
Cotyle paludibula, Tristram, Ibis, 1869, p. 437 (nec Rüpp.).
"*Cotyle thebaica*, Pr. Würt.," Heuglin, Orn. N.O.-Afr. p. 163 (1869).
Ptyonoprogne pallida, Hume, Stray Feathers, i. p. 1 (1872).
Cotyle rupestris auctt. orn. Afr. (partim).

Figura nulla.

Ad. C. rupestri persimilis sed minor, multo pallidior, coloribus obsoletis: corpore subtùs albido, mento et gulâ immaculatis: hypochondriis et crisso rufescente fusco lavatis: caudâ vix furcatâ.

Juv. adulto similis sed sordidior, corpore subtùs rufescente adumbrato.

Adult Male (Egypt, 9th March, 1868). Resembles *Cotyle rupestris*, but is much smaller, greyer, and paler; upper parts very pale greyish sandy brown, darkest on the head and palest on the rump; lores blackish brown; underparts creamy white, on the chin and upper throat almost pure white; flanks, lower abdomen, and under tail-coverts washed with dull rufous brown; tail and wings as in *Cotyle rupestris*, but much paler, the former almost square, and scarcely emarginate; bill black, inside of mouth dirty yellow; tarsus dark brown, soles whitish; iris dark brown. Total length 5·2 to 5·5 inches, culmen 0·35, gape 0·52, wing 4·5, tail 2·1, tarsus 0·45.

Young (Egypt, 11th April). Resembles the adult, but is somewhat duller in colour, and has the breast and abdomen slightly clouded with dull reddish buff.

Obs. I can detect no difference in plumage or size by which the female may be distinguished from the male. In measurements the series of specimens I have examined vary as follows—culmen 0·3 to 0·38 inch, wing 4·3 to 4·65, tail 1·9 to 2·2, tarsus 0·4 to 0·48—from which it will be seen that it is on the average much less in size than *Cotyle rupestris*.

This small and pale form of *Cotyle rupestris* inhabits Palestine, North-east Africa, Sindh, and Baluchistan, and where found appears to be a resident, and not a migrant. I possess a specimen from Palestine which agrees closely with others from Egypt. Canon Tristram, referring to this species, says (*l. c.*):—"*Cotyle palustris* we found throughout the year in the Jordan valley, consorting to the north of the Dead Sea with *Cotyle rupestris*, while round its shores it holds undisputed possession. The two birds breed in the same locality, in the clefts of Mount Quarantania, near Jericho. They have the same note and flight; but while the other bird confines itself to the

gorges, this may often be seen skimming the surface of the wide sand-flats and sand-spits of the Dead Sea. It particularly affects the neighbourhood of Jebel Usdum, the salt-mountain, where it breeds. I possess only one egg, marked exactly like, but considerably smaller than that of the common Swallow."

In North-east Africa it is the common Crag-Martin of the country, as far as Egypt and Nubia are concerned; but there is no doubt that *Cotyle rupestris* also occurs in Abyssinia, as specimens collected by Mr. Blanford when on the Abyssinian expedition, which I have examined, are certainly referable to this latter species. Von Heuglin states (*l. c.*) that "it is resident in Egypt, Nubia, and Abyssinia, as also on the coast of Arabia and in the mountains of the Sinaitic peninsula; and Captain Shelley writes (B. of Egypt, p. 123) as follows:—"This species of Crag-Swallow is very plentifully distributed throughout Egypt and Nubia, where it is a resident. It only frequents the rocky districts, and is therefore of rare occurrence in the Delta, although at Cairo and the Pyramids it is abundant."

To the eastward it is found as far as Baluchistan, where it was met with by Mr. Blanford and Mr. A. O. Hume. The former gentleman, in his now forthcoming work on the ornithology of Persia, writes as follows:—"I have ascertained the identity of this form with Cabanis's species, by comparison with the types in Berlin, and with specimens from North-eastern Africa in the British Museum. I obtained it in Sind about the same time as Mr. Hume did, and I subsequently found it common throughout Balúchistán. I never saw it on the Persian highlands, where it appeared to be entirely replaced by *C. rupestris*, just as in Western and Central India it is represented by *C. concolor*, Sykes, a still smaller form. *C. obsoleta* is far from being so thorough a Crag-Martin as *C. rupestris*. I have often met with it about hills, but, I think, more frequently still in the neighbourhood of the broad stream-beds, usually dry, which intersect the desert plains of Balúchistán, but which, from containing more vegetation than the surrounding country, afford a larger quantity of insect food to Swallows and Martins. *C. obsoleta* was very common in December and January along the sea-shore. I did not see much of it in its breeding-haunts, though the birds at Kalagán and Jálk in March were in pairs, hunting about particular spots as if building nests; and the males which I dissected had enlarged testes. They doubtless breed on rocks, like their allies." Mr. A. O. Hume, who, when he obtained it in Sindh, described it as new, says (*l. c.*) that it is "very common along the course of the Gaj, the Nurrinai, and other small streams that issue from the bare stony hills that divide Sindh from Kelat. I found it again off the rocky headland of Minora, at the mouth of the Kurrachee harbour, and in similar localities along the Mekran coast. The flight is rapid, and the birds are somewhat difficult, as some of our party found, to bring to bag. I think I heard of a whole flask of shot being fired away without any tangible result."

In its habits the present species closely resembles *Cotyle rupestris*, which it replaces in North-east Africa and the desert country of Sindh and Baluchistan. Von Heuglin writes that it frequents the bare rocks and old burying-places, both in the vicinity of the coast and also at great elevations in the mountains, where he met with it as high as from 11,000 to 12,000 feet above the sea-level. Its flight is exceedingly swift and straight, though at times irregular, at times low over the surface of the desert, at others so high in the air that the eye can scarcely reach it. Owing to the pale coloration of the plumage of this bird, it seems in the bright sunshine to

disappear into space, as if by magic, as it passes swiftly by. He states that it breeds very early in the year.

Dr. A. E. Brehm says (J. f. O. 1853, Extrah. p. 96) that it builds a hemispherical nest of clay, which it places in the interior of buildings in the desert, as, for instance, in tombs, mosques, and such places, or else in cracks in the rocks under overhanging precipices. On the 24th of March, 1850, he found in the saints' tombs in the desert near Assuan two nests, each containing three pale reddish eggs, dotted with brownish red.

The specimens figured are those described, and are in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Egypt, March 9th, 1868 (*G. E. Shelley*). *b*, *juv.* Egypt, April 11th, 1870 (*G. E. S.*). *c*. Egypt (*G. E. S.*). *d*. Egypt (*J. Gould*). *e*. Palestine (*E. Bartlett*). *f*, ♂. Gwadar, Baluchistan, December 1871 (*W. T. Blanford*).

E Mus. Ind. Calc.

a, ♀. Mekran coast, November 29th. *b*. Gwadár coast, Baluchistan, December. *c*. Near Gwadár, January 23rd. *d*, ♂. Bahu Kalát, Baluchistan, February 1st. *e*, ♂, *f*, ♀. Kalagán, Baluchistan, March 12th and 13th. *g*. Jálk, Baluchistan, March 17th (*W. T. Blanford*).

E Mus. G. E. Shelley.

a, ♀. Nubia, April 4th, 1870 (*G. E. S.*).

Section III. OSCINES CONIROSTRES.

Family FRINGILLIDÆ.

Subfamily *FRINGILLINÆ*.

Genus CARDUELIS.

Carduelis, Brisson, Orn. iii. p. 53 (1760).
Fringilla apud Linnæus, Syst. Nat. i. p. 318 (1766).
Emberiza apud Scopoli, Ann. I. Hist. Nat. p. 144 (1769).
Acanthus apud Bechstein, Gemeinn. Naturg. Deutschl. 2nd ed. ii. p. 199 (1807).
Passer apud Pallas, Zoogr. Rosso-As. ii. p. 15 (1811).
Spinus apud Koch, Baier. Zool. i. p. 233 (1816).

The subfamily *Fringillinæ* has been considerably subdivided; and but few authors agree in their mode of arrangement of the various genera contained in it. I have therefore had no little trouble in arriving at a decision on the subject, and there are yet many points on which I have scarcely succeeded in satifying myself; but, on the whole, I have, after taking structure, habits, and mode of reproduction into consideration, divided it into as natural groups as possible, though in so doing I have had to subdivide it rather more than I at first proposed to do. The present genus, which contains only *Carduelis elegans* and a closely allied Asiatic species, *Carduelis caniceps* (Vig.), is only found in the Palæarctic, Ethiopian, and northern portion of the Oriental Region, one species inhabiting the Western Palæarctic Region. In general habits the Goldfinch does not differ much from the other Finches. It inhabits groves, gardens, and fields, feeding chiefly on seeds of various kinds. Its flight is strong and rapid; in general habits it is lively and active; and its song is sweet and varied. It places its nest, which is neatly constructed of moss, grass, &c., and lined with the down of plants, on a tree or bush, and deposits several bluish white eggs marked with reddish or reddish brown.

Carduelis elegans, the type of the genus, has the bill moderately long, straight, conical, tapering to a slender point, destitute of notch, the upper mandible extending beyond the lower one; nostrils circular, basal, concealed by feathers directed forward; gape without bristles; wings long, rather broad, the first three quills nearly equal, the second longest; tail rather short, slightly emarginate; legs short, the tarsus covered in front with four plates and three inferior scutellæ; toes slender, compressed; claws long, slender, arched, laterally grooved, acute; plumage soft, blended; the fore part of the head rich scarlet in colour.



GOLDFINCH.

CARDUELIS ELEGANS.

CARDUELIS ELEGANS.

(GOLDFINCH.)

Carduelis, Brisson, Orn. iii. p. 53 (1760).
Fringilla carduelis, Linn. Syst. Nat. i. p. 318 (1766).
Emberiza carduelis (L.), Scop. Ann. I. Hist. Nat. p. 144 (1769).
?*Fringilla albo-ochracea*, Jacq. Beitr. p. 27, pl. 12 (1784).
?*Fringilla ochracea*, Gmel. Syst. Nat. i. p. 928 (1788, ex Jacq.).
Acanthis, Bechst. (*Fringilla carduelis*, Linn.), Gemeinn. Naturg. Deutschl. 2nd ed. ii. p. 199 (1807).
Passer carduelis (L.), Pall. Zoogr. Rosso-As. ii. p. 15 (1811).
Spinus carduelis, Koch, Baier. Zool. i. p. 233 (1816).
Carduelis carduelis (L.), Boie, Isis, 1822, p. 554.
Carduelis elegans, Steph. in Shaw's Gen. Zool. xiv. p. 30 (1826).
Carduelis septentrionalis, C. L. Brehm, Vög. Deutschl. p. 288 (1831).
Carduelis germanica, C. L. Brehm, op. cit. p. 289 (1831).
Carduelis aurata, Eyton, Cat. Brit. Birds, p. 20 (1836).
Fringilla (*Acanthis*) *carduelis* (L.), Keys. & Blas. Wirbelth. Eur. p. 41 (1840).
Carduelis accedens, C. L. Brehm, Vogelfang, p. 109 (1855).
Carduelis aurantiipennis, C. L. Brehm, ut suprà (1855).
Carduelis meridionalis, C. L. Brehm, ut suprà (1855).

Goldfinch, *Thistlefinch*, English; *Lasair-choille*, Gaelic; *Chardonneret*, French; *Zeisig*, *Stieglitz*, *Distelfink*, German; *Pintasilgo*, Portuguese; *Gilguero*, *Silguero*, Spanish; *Cardellino*, Italian; *Gardil*, Maltese; *Mouknin*, Moorish; *Distelvink*, *Putter*, Dutch; *Stillids*, Danish; *Stillids*, Norwegian; *Steglitsa*, Swedish; *Tiklivarpunen*, Finnish; *Shcheglénock*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 4. figs. 1, 2; Werner, Atlas, *Granivores*, pl. 50; Kjærb. Orn. Dan. xxviii. *a*; Frisch, Vög. Deutschl. taf. 1. figs. 2, 3; Fritsch, Vög. Eur. taf. 25. fig. 7; Naumann, Vög. Deutschl. taf. 124. figs. 1, 2; Sundevall, Svensk. Fogl. pl. iv. figs. 1, 2; Gould, B. of Eur. pl. 196; id. B. of G. B. iii. pl. 36; Schlegel, Vog. Nederl. pl. 167; Roux, Orn. Prov. pls. 97, 98.

♂ *ad.* fronte, genis et gulâ coccineis, loris et lineâ circa basin rostri nigris, vertice nigro fasciam demittente nigram ad latus colli utrumque: pone oculos fascia alba descendit et cum jugulo albo se conjungit: dorso, scapularibus et uropygio summo pallidè brunneis castaneo tinctis: remigibus nigris maculâ albâ apicali notatis, omnibus (secundariis intimis exceptis) dimidio basali pogonii externi flavis: tectricibus majoribus flavis, minoribus nigris: caudâ nigrâ, rectricibus duabus externis utrinque maculâ ovali albâ versus apicem pogonii interni notatis, tertiâ vix eodem modo notatâ: uropygio imo et supracaudalibus

albis vix brunneo lavatis : corpore subtùs albo, pectore et hypochondriis vix pallidè fuscescente castaneo lavatis : rostro albicante, ad apicem nigro-fusco : iride fuscâ : pedibus pallidè brunnescenti-carneis.

♀ *ad.* mari similis sed sordidior, coccineo in fronte, genis et gulâ minus extenso et vix nigro immixto : tectricibus alarum minoribus brunneis nec nigris.

Juv. dorso pallidiore : capite et collo dorso concoloribus sed vix pallidioribus : remigibus primariis vix et secundariis valdè fuscescente cervino terminatis : caudâ minus albo notatâ sed cervino apicatâ : gutture et corpore subtùs albidis, gutture et pectore brunneo lavatis, hôc indistinctè fuliginoso guttato.

Adult Male. Feathers at the base of the bill, lores, region immediately round the eye, hind crown, and nape deep black, this colour passing from the nape to the sides of the neck in a crescent shape; fore part of the crown and upper part of the throat rich scarlet; lower throat and sides of the head between the black and the scarlet pure white; and a narrow space on the hind neck below the black also white; back, scapulars, and rump dusky warm wood-brown; quills black, the basal half of the outer web of all the quills, except the innermost secondaries, brilliant gamboge-yellow; most of the quills marked with a white spot at the tip; larger wing-coverts gamboge-yellow, lesser coverts black; upper tail-coverts greyish white; tail black, the central feathers tipped with white, the two outer feathers on each side with an elongated oval patch of white near the tip of the inner web, the third with only a very slight white spot; underparts white, washed with wood-brown on the breast and flanks; beak whitish, with a dark tip; iris dark brown; legs and feet dull flesh-colour; claws dark brown. Total length about 5–5·5 inches, culmen 0·5, wing 3·15, tail 2·1, tarsus 0·6.

Adult Female (Hampstead). Resembles the male, but is duller in colour; the red on the forehead and chin covers a smaller space, and is slightly intermixed with black; and the lesser wing-coverts are brown.

Young (Hampstead). Head, neck, back, and scapulars dull light wood-brown; wings as in the adult female, but the primaries are slightly and the secondaries broadly tipped with brownish buff; tail less marked with white, and tipped with buffy brown; chin, throat, and underparts dirty white, the throat and the breast washed with pale brown, the latter very indistinctly spotted with sooty grey.

Obs. I do not find much variation in colour in the specimens I have examined; and one from Persia does not in the least differ from others obtained in England. I have one, however, from the Ural which differs more than any of the others, and have therefore figured it. It is somewhat larger in size, has the black on the crown almost divided from that on the nape, the fore part of the back is whiter, and the rump and upper tail-coverts are pure white; there is also more white on the tail; and the sides of the breast are pale brown intermixed with sulphur-yellow, the rest of the underparts being pure white. In size the variations are not a little; but these seem to be individual differences, as one finds specimens from the same locality differing as much as any.

The range of the present species is not very extensive, as it does not occur much beyond the western Palæarctic Region, being found only as far east as Turkestan.

In Great Britain it is found generally distributed and resident; but in Scotland it becomes rare in the northern provinces, though said to breed regularly in Ross-shire, and occasionally in Caithness. Mr. Robert Gray says (B. of W. of Scotl. p. 145) that in Renfrewshire, Ayrshire, and some parts of Argyleshire it is still sparingly distributed, but is gradually diminishing in numbers. The late Mr. St. John also observed it in Sutherlandshire; but it does not occur in Shetland, nor do I find any record of its occurrence on the other islands off the coast of Scotland.

In Ireland it is found in many parts of the island, but is, Thompson says, by no means generally distributed. It does not appear to have ever straggled as far north as Iceland; nor has it been met with in the Færoes, but is tolerably common in Southern Scandinavia, though not found far north. Mr. Robert Collett says that it breeds here and there in the southern lowlands, but is seldom seen except during passage and in winter. On the west coast it breeds at Stavanger, in Hard, and Nordmör. Northward it has been met with at Trondhjem and Snaasen, in 64½° N. lat.; but though said to occur in Finmark, this requires confirmation. According to Professor Sundevall it is "common throughout the whole of Southern Sweden, and found as far north as Upsala, but has not been met with in Lapland. It is a resident, but during the winter collects in flocks and wanders about the country." In Finland it is rare, and has only been observed since about 1840 in the neighbourhood of Helsingfors; but latterly it has been also recorded from Borgå and Lovisa. In Russia it occurs as far north as Archangel, where, however, it is rather rare than otherwise. Mr. Sabanäeff informs me that it is resident throughout the Governments of Orloff, Voronege, Kieff, and Charkoff, but becomes rarer further north. He also met with it in the birch-woods on the eastern slope of the Ekaterinburg district, in the Ural range. In the Baltic provinces, Poland, and throughout North Germany generally it is tolerably common and resident, only wandering about during the winter season. In Denmark, Mr. Benzon informs me, it is neither rare nor yet common during the summer, and breeds throughout the country, especially in localities where the chestnut-trees are common. In the autumn it becomes commoner, and tolerably large flocks may then be seen. In Western Germany, as elsewhere in that country, it is resident, and, Mr. Sachse informs me, breeds numerously at Altenkirchen, in Rhenish Prussia, and remains until the beginning of the winter; but so soon as the snow falls and frost sets in most of them disappear, and take up their quarters in the warmer valley of the Rhine, only a few remaining throughout the winter. In Belgium it is a common and resident species; and in Holland, Mr. H. M. Labouchere writes to me, it is "common in the wooded districts of the provinces of North and South Holland and Zeeland, where I have often caught specimens. In the pine-growing provinces of Utrecht, Guelderland, and North Brabant, however, it is very scarce, and although I have spent whole summers in those parts of the country I never observed as much as a single Goldfinch. I have noticed that in the last-named provinces there is a great scarcity of thistles, nettles, and other weeds, which on the damp soil of the other provinces are very plentiful; and as these are the favourite food of these birds, their absence from those localities is no doubt due to this fact. In Switzerland I made the same observation, where, in the low, fertile plains in the neighbourhood of Winterthur, Goldfinches are exceedingly abundant, whilst in the mountainous districts they are never to be seen at all." In France, as elsewhere in Central Europe, it is resident; and in Portugal it is said to be extremely common. In Spain I observed it in all parts of the country I visited, and took its nest in the immediate vicinity of Madrid; and Colonel Irby says that it is without doubt the most abundant bird in the west of Andalucia. In Savoy it is resident, and common, some few leaving for the winter; and in Italy, though generally speaking numerous, it is somewhat locally distributed. In Sardinia, Mr. A. B. Brooke says, it is the commonest Finch in the island; and in Sicily it is also numerous, and resident. Mr. C. A. Wright records it (Ibis, 1864, p. 54) as being "not very common in Malta and Gozo, arriving in October and again in April and May.

A few are to be found in the winter; and it has been known to breed here." Lord Lilford found it breeding numerously in Corfu; and both Lindermayer and Von der Mühle say that it is one of the commonest resident species in Greece, being exceedingly numerous in the winter season. It breeds in the northern provinces. Throughout the whole of the rest of Southern Europe it is tolerably generally distributed, and common in many places. I frequently saw it in Styria and in the countries skirting the Danube; and Von Nordmann speaks of it as being numerous in Southern Russia. In Asia Minor it is common, and resident; it breeds in Crete; and Canon Tristram met with it in Palestine. In North-east Africa it is said by Von Heuglin to be met with in Lower Egypt in small flocks or singly; and Captain Shelley writes (B. of Egypt, p. 162), it is "abundant in the Delta in winter; but I am not aware of its having been met with south of Cairo. I shot a specimen out of some large flocks that I fell in with near Damietta in March." In North-western Africa it is common, and resident. Loche speaks of it as being found in all three provinces of Algeria; Mr. O. Salvin found it common everywhere in the Eastern Atlas, and adds that at Djendeli it builds a neat nest composed almost entirely of the flowers of the tamarisk; Mr. J. H. Gurney, jun., says that it is the commonest bird in many parts of the Tell; and Mr. C. F. Tyrwhitt-Drake met with it in Tangier and Eastern Morocco. Colonel Irby says that, according to Favier, it is "exceedingly plentiful near Tangier, and resident; but numbers migrate, arriving from about the month of August, to depart again for the north in March." It is also met with in the Canaries and Madeira, where it is exceedingly common; but it has not been found in the Azores.

To the eastward it is found at least as far as Turkestan, but does not appear to be met with further east; and here it meets its ally *Carduelis caniceps*, Vig. (*C. orientalis*, Evers.). Mr. Blanford states that it is locally distributed on the Persian plateau, where it is apparently a permanent resident. He did not meet with it in Northern Persia; but De Filippi records it from Tabriz, and Ménétries from Lankorán. Major St. John met with it at Nanizak, near Bushire, in February, and says that it breeds numerously about Shiráz. In Turkestan, according to Severtzoff, it occurs during winter, and may possibly remain to breed in the north-eastern, north-western, and south-eastern districts. He adds that both the present species and *Carduelis caniceps* inhabit the same localities in the Thian-shan range. I have examined specimens from Turkestan which agree with our bird, and others labelled *C. orientalis*, also from Turkestan, which agree closely with examples of *C. caniceps* from India.

The Goldfinch, or Thistlefinch as it is frequently called, frequents during the summer season either well-wooded localities or gardens and orchards, and small groves, but always in the vicinity of fields; and it is never met with in the dense forests or in conifer-growth, as it affects non-evergreen woods and groves. During the breeding-season it is most frequently met with not far distant from human habitations; and its nest is often built in gardens and orchards, generally at no great altitude; I have usually found it placed on a fruit-tree. In the autumn, when the young birds are full-grown, they and their parents collect together in tolerably large flocks and wander about the country, at this season frequenting open places, especially where thistles are plentiful, on the seeds of which plant they feed with avidity. It is an exceedingly lively, active bird, always busy and in motion; and its sprightly habits, good song, and pretty figure make it a very favourite cage-bird, besides which it is very teachable and can easily be taught any thing

that a canary will learn. It is seldom seen on the ground, but usually on a bush or tree, or climbing about or hanging on to a thistle or some weed, picking out the seed. It is fond of the company of others of the same species, and will frequently consort also with other allied species. Its flight is light, somewhat jerky, and tolerably swift; and when on the wing it continually utters its call-note, *pick*, *pick*, *pickelmik*, or *sticklit*, from which its Swedish, Danish, and German names are derived. On the wing its bright colours and mode of flight render it tolerably easily recognizable; and were it not for those its constantly uttered call-note would serve to identify it. Its song is sweet, but scarcely as good as that of the Linnet; but it is a very industrious songster, and the male may be heard singing from March to the end of July or the beginning of August. It is a hardy, strong bird, and does not leave unless driven away by very severe weather and consequent difficulty in obtaining food. It feeds on seeds of various kinds, especially on that of the thistle and many of our common weeds; but it would seem that it feeds its young on insects, and may, to some extent, itself feed on these during the spring; seeds, however, form the staple portion of its food. It is not a very early breeder, and never prepares its nest until the trees are in leaf. The nest is an exceedingly neat structure, nearly as artistically built as that of the Chaffinch. It is carefully and closely constructed of moss and lichens interwoven with fine roots &c., and carefully lined, first with the down off plants, most generally thistle-down, and inside this there is a slight lining of horse-hair; it is cup-shaped, and carefully finished off, the sides being neatly rounded. The nest is most frequently placed in a tree; but I have found it in a bush. Mr. Benzon informs me that in Denmark it usually places its nest in a fruit- or a chestnut-tree, and always in a non-evergreen tree, at some distance out from the main stem, and consequently not easy to find or take. Near Altenkirchen, in Rhenish Prussia, Mr. Sachse informs me, it usually builds in a pear, plum, chestnut, or poplar tree, usually in the outer branches, and the eggs are generally deposited late in May or early in June, the number of eggs being four or five, seldom six; and sometimes a second brood is raised. "A pair have built," he says, "several years in succession in a tree under which a man is almost always sitting breaking stones; and the continual noise does not seem to trouble the birds. On the 27th of June 1867, I took five eggs; and the birds, after wandering about in the neighbourhood till the 1st July, selected another site and built so quickly that on the 9th July I found the female had deposited five eggs in the new nest." The female alone works in the construction of the nest, but is closely attended by her mate, who cheers her with his sweet song. The eggs, usually four or five in number, are white, with a pale blue-green tinge, and are marked with faint reddish underlying shell-markings and dark reddish brown blotches or streaks, which are almost confined to the larger end. Specimens in my collection vary in size from $\frac{2}{4}\frac{8}{0}$ by $\frac{1}{4}\frac{9}{0}$ inch to $\frac{2}{4}\frac{9}{0}$ by $\frac{2}{4}\frac{0}{0}$ inch.

The specimens figured are an adult male and a young bird from England, and a slightly different variety from the Ural, all being in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Cookham, Berks, November 1869 (*R. B. S.*). *b*, ♀. Hampstead, February 11th, 1870 (*Davy*). *c*, *d*, *e*, *f*. Hampstead (*Davy*). *g*, *juv.* Hampstead (*Davy*). *h*, *juv.* Hampstead, October 14th, 1871 (*Davy*). *i*, ♀ *juv.*

Stockholm, August 3rd, 1871. *j, k, l.* France (*Fairmaire*). *m*, ♂, *n*, ♀. Piedmont, April. *o*, ♂. Piedmont, March 1870 (*Count Salvadori*). *p*, ♂. Valencia, April 1871 (*Howard Saunders*). *q*, ♂. Algiers, February 5th, 1870 (*J. H. Gurney, jun.*). *r*. Southern Ural, March 28th, 1869 (*L. Sabanäeff*). *s*. Shiraz, Persia, summer 1870 (*Major St. John*).

E Mus. Howard Saunders.

a, ♂. Malaga, February 22nd. *b*, ♀. Valencia, April.

E Mus. C. A. Wright.

a, ♂. Malta, January 1863 (*C. A. W.*).

E Mus. H. B. Tristram.

a. Jericho, January 2nd, 1864. *b, c, d*. Moab, March 13th, 1872 (*H. B. T.*).

Genus CHRYSOMITRIS.

Carduelis apud Brisson, Orn. iii. p. 65 (1760).
Passer apud Brisson, tom. cit. p. 182 (1760).
Fringilla apud Linnæus, Syst. Nat. i. p. 320 (1766).
Emberiza apud Scopoli, Ann. I. Hist. Nat. p. 144 (1769).
Linaria apud Leach, Syst. Cat. M. & B. Brit. Mus. p. 15 (1816).
Spinus apud Koch, Baier. Zool. p. 234 (1816).
Serinus apud Boie, Isis, 1822, p. 555.
Chrysomitris, Boie, Isis, 1828, p. 322.
Citrinella apud Bonaparte, Comp. List, p. 34 (1838).
Chlorospiza apud Keyserling & Blasius, Wirbelth. Eur. p. xli. (1840).
Cannabina apud Degland, Orn. Eur. i. p. 234 (1849).
Chloroptila apud Salvadori, Atti R. Acc. Sc. di Tor. vii. p. 260 (1871).

Though closely resembling *Carduelis* in the form of the bill, *Chrysomitris* appears to be fairly separable by several small differences, such as the general predominance of yellowish green in the plumage and lacking the rich scarlet colouring on the head; I have therefore deemed it advisable to separate them. This genus is distributed throughout the Palæarctic and Nearctic Regions, as well as the northern portions of the Ethiopian, Oriental, and Neotropical Regions, two species only being found within the limits of the Western Palæarctic Region.

Like the Goldfinches the species belonging to the present genus frequent groves, gardens, orchards, &c., but are more frequently found in larger woods, and more especially in those where conifer trees predominate. During the autumn and winter, however, they resort to the fields and open places, and feed on seeds of various kinds, being especially partial to the seeds of the alder and birch. They are active and lively birds; and their flight is strong and swift. Their ordinary note is clear and sweet; and their song, though not very varied, is musical and pleasant. They construct neat cup-shaped nests of moss, rootlets, &c., lined with plant-cotton and feathers, and deposit pale greenish eggs spotted with reddish.

Chrysomitris spinus, the type of the genus, has the bill short, stout, straight, conical, tapering to an acute point; nostrils basal, roundish, concealed by short, stiff feathers directed forward; gape without bristles; wings rather long, the first three quills nearly equal and longest; tail rather short, forked; legs and toes slender, the tarsus covered in front with four plates and three inferior scutellæ; claws moderately long, laterally grooved, curved, acute; plumage soft, blended, the predominant colour being yellowish green.



CITRIL FINCH.
WINTER PLUMAGE.



CITRIL FINCH.
CHRYSOMITRIS CITRINELLA.

CHRYSOMITRIS CITRINELLA.

(CITRIL FINCH.)

Passer serinus italicus, Briss. Orn. iii. p. 182 (1760).
Fringilla citrinella, Linn. Syst. Nat. i. p. 320 (1766).
Emberiza brumalis, Scop. Ann. I. Hist. Nat. p. 145 (1769).
Venturon de Provence, D'Aubent. Pl. Enl. 658. fig. 2 (1770).
Spinus citrinella (L.), Koch, Baier. Zool. i. p. 234 (1816).
Serinus citrinella (L.), Boie, Isis, 1822, p. 555.
Spinus citrinellus (L.), C. L. Brehm, Vög. Deutschl. p. 286 (1831).
Carduelis citrinella (L.), Gould, B. of Eur. pl. 198 (1837).
Citrinella serinus, Bp. Comp. List, p. 34. no. 219 (1838, nec Linn.).
Fringilla (Chlorospiza) citrinella (L.), Keys. & Blas. Wirbelth. Eur. p. xli. (1840).
Cannabina citrinella (L.), Degl. Orn. Eur. i. p. 234 (1849).
Citrinella alpina (Scop.) [ubi?], Bp. Consp. Gen. Av. i. p. 520 (1850).
Chloroptila citrinella, Salvad. Att. R. Acc. Sc. di Tor. vii. p. 260 (1871).

Venturon alpin, French; *Venturone*, Italian; *Citronenzeisig*, *Citronenfink*, German.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 652. fig. 2; Werner, Atlas, *Granivores*, pl. 47; Fritsch, Vög. Eur. taf. 17. fig. 8; Naumann, Vög. Deutschl. taf. 124. figs. 3, 4; Gould, B. of Eur. pl. 198.

♂ *ad. ptil. æst.* pileo frontali, regione circum basin rostri ad oculum, gulâ, corpore subtùs, uropygio et supracaudalibus pulchrè viridi-flavis: nuchâ, collo postico et colli lateribus schistaceo-cinereis: dorsi plumis pallidè fusco-cinereis conspicuè viridi marginatis: remigibus et rectricibus nigro-fuscis, extùs flavo-viridi marginatis: tectricibus alarum nigricantibus, valdè flavo-viridi terminatis: hypochondriis schistaceo-cinereis: rostro purpureo-corneo: iride fuscâ: pedibus brunnescenti-carneis.

♀ *ad.* mari similis sed sordidior, capite minus flavido notato, dorso grisescentiore, corpore subtùs pallidiore, pectore cinereo flavo-viridi immixto.

♂ *ptil. hiem.* facie frontali et corpore subtùs magis flavis et pulchrioribus, dorso rufescenti-brunneo vix viridi lavato, plumis centraliter saturatè brunneis.

Adult Male in summer (Baden, 15th June). Crown, space round the bill as far as the eye, throat in front, entire underparts, rump, and upper tail-coverts greenish yellow, or yellowish apple-green; nape, hind neck, and sides of the neck slaty blue; back dull green, with brownish markings, the feathers being greyish in the centre and broadly margined with green; quills and tail blackish, with narrow yellowish external margins; wing-coverts broadly tipped with yellowish green, this colour forming a distinct band across the wing, the lesser coverts having the dark basal portion concealed; flanks greyish slate;

bill dark purplish blue; iris dark brown; legs fleshy brown. Total length about 5 inches, culmen 0·4, wing 3·15, tail 2·45, tarsus 0·6.

Adult Female (Baden, 19th June). Resembles the male, but the yellow on the head covers a smaller area, the back is greyish, with a brown tinge, and washed with green, and the underparts are much paler and yellower, the breast being slate-blue intermixed with yellowish green.

Adult Male in autumn (St. Blasien, Baden, 12th October). Resembles the male above described, but is rather brighter, more yellow, and less green in tinge, and the back is scarcely so green as in that specimen.

Winter plumage (Corsica, 6th February). Resembles the autumn-plumaged bird; but the entire dorsal region is reddish brown with dark central stripes to the feathers, and slightly tinged with green; the underparts and the yellow portion of the head are also much brighter and yellower in tinge than in any other specimens I possess; and on the forehead it is clearly defined, and does not gradually merge into the dark colour of the crown.

Obs. Whether this bird is the adult in full winter dress, or whether it is the young which has attained full plumage everywhere but on the back, I cannot say; but both specimens from Corsica have the back reddish brown, without any trace of slaty grey, and with only a slight sign of green, though in every other respect they agree precisely with the autumn-killed examples from Baden, except perhaps that in the male the yellow on the head and underparts is rather richer in colour, and more clearly defined, which argues against their being immature birds. I observe, on looking over my series of adult birds from Baden, that one or two have a trace, though only slight, of the brown back which is so conspicuous at the first glance in these Corsican examples; or else I should be almost inclined to look on these latter as belonging to a southern race: but I observe that Salvadori's description of the adult bird (in summer?) agrees closely with my specimens from Baden, and other authors state that the birds found in the south of Europe are identical with those from Switzerland. I can confirm this as regards the bird found in Spain, having examined the specimen in Mr. Saunders's collection.

Young Female (Baden, 19th June). Head, neck, back, and scapulars dull buffy brown, with dark brown stripes or markings along the centres of the feathers; rump paler, being buff; quills blackish, with narrow whitish edgings at the tip; primaries externally margined with pale yellowish buff; inner secondaries broadly margined, and both larger and lesser coverts broadly tipped, with warm yellowish buff, the latter forming two conspicuous bars across the wing; underparts buffy white, washed with sulphur-yellow, and indistinctly striped with greyish brown. The young males and females differ very slightly, the males being rather darker, and on the back have a tinge of reddish brown.

The range of the Citril Finch is somewhat restricted; for it inhabits the mountain-ranges of Southern Europe during summer, and only leaves these when it is driven down by severe weather. It has not been recorded out of Europe proper, except by Loche, who says that it is a rare straggler to Algeria.

It has not been met with in Northern Europe, nor in the northern part of Central Europe, except as a rare straggler; and it does not appear to breed further north than the Black Forest of Baden, where I met with it this summer. Borggreve writes that it has not been seen in North Germany; and Messrs. Degland and Gerbe state that its occurrence in the northern districts of France is accidental, and record an instance of its capture near Lille on the 14th

October, 1848; but in the Alpes Maritimes it nests regularly, and thence flocks descend annually in more or less abundance to Provence. It is an inhabitant of the moderately elevated portions of the Pyrenees, and in winter and early spring it visits the lower regions about Toulouse; but Dr. Companyó says that it is only in the severest winters that it is found in the neighbourhood of Perpignan.

Colonel Irby did not meet with it in Spain; but Mr. Howard Saunders sends me the following notes, together with a specimen in its first autumn plumage:—"I send to you the only Spanish specimen which I actually possess, and which is an immature bird, captured by a birdcatcher near Madrid in the autumn of 1869; but during the severe winter of 1867–68 I found it abundant in the neighbourhood of Malaga, and the birdcatchers had plenty in their cages at the 'feria' held every Sunday in the drier portions of the bed of the river Guadalmedina, which divides the town into two portions. As they were very much soiled I did not purchase any; and as soon as the weather became a little warmer the flocks returned to the mountains. In the last days of March 1869 a pair were finishing their nest in the precincts of the Alhambra, at Granada; and I watched the birds daily until three eggs were laid, when, having to leave the place, I took the whole, on the 4th of April; but, owing to the position chosen, it was impossible to shoot the birds, the Alhambra being sacred ground. There could be no mistake about the birds, which I frequently observed from a few yards' distance, the nest being in a small fork at the side of a tree, about 7 feet from the ground, much the same situation as would be chosen by a Greenfinch. The nest is warmly lined, but larger than, and quite different from, that of the Serin Finch; the eggs are nearly as large as those of the Goldfinch, but somewhat resemble miniature Greenfinches' eggs. I observe that Colonel Irby (Ornith. Straits Gibraltar, p. 123) did not obtain it on either side of the Straits; but at this I am not surprised, as the country near and to the west of Gibraltar is not adapted to it: but in the 'faldas de la sierra,' or intermediate mountain districts, it is, I believe, a resident species. Don Angel Guirao, a careful observer, states that it is common in the higher districts of Murcia."

In Switzerland, Savoy, and in the mountains of Baden, the present species is common. It is said to be numerous in most parts of Switzerland; and Meisner and Schinz say that the Citril Finch breeds on the Gurnigel, and that in the autumn they collect in flocks and descend lower down the mountains. Near Bern it is seen in spring, and in the autumn numbers are snared sometimes near Thun; but they disappear in winter.

Owing to confusion with *Serinus hortulanus*, it has been stated by various authors to be common and resident in Italy; but this is denied by Savi, Salvadori, and Doderlein, who are unaware of any authentic record of its occurrence beyond the more northern districts, such as Piedmont, Venice, and Lombardy, and even there principally in the autumn and winter, its departure in spring being invariable. Both Doderlein and Benoit deny its reported occurrence in Sicily; and Salvadori considers that there is no authentic instance of its being found in the island of Sardinia.

Lord Lilford informs me that when at Corsica in February last he saw large flocks of Citril Finches near Porto Vecchio, and obtained two specimens, a male and a female. These he has lent to me for examination; and I observe that they are rather remarkable in having the back brown without any tinge of grey, and judge that this must be the full winter dress, rather than

a variety of plumage; for I observe that Count Salvadori's description of this species in summer dress agrees closely with my specimens from Baden. Lord Lilford says, "the spot they particularly seemed to affect was a stony grass-grown space near a shepherd's hut amongst the 'macchie' or dense evergreen thicket which covers a great part of Corsica. We did not meet with them elsewhere in either of my late cruises in the Mediterranean."

It is found in Southern Germany, and is stated to be not uncommon in the Tyrolean Alps; but Mr. Seidensacher told me he had never met with it in Styria, where, on the other hand, *Serinus hortulanus* is tolerably common. The Ritter von Tschusi-Schmidhofen informs me that, according to Professor Jeitteles, one was obtained in a garden near Olmütz in March 1868. He himself does not know of any instance of its having bred in Austria, but only in the Tyrol, where it is found in the southern portion of that country.

Lord Lilford met with it in Corfu and Epirus, where, he writes (Ibis, 1860, p. 138), it is common in summer, but he is unaware if it leaves the island in winter. Both Lindermayer and Von der Mühle record its occurrence in Greece, but say that it is met with only in the hills in the winter season, and they are unaware if it remains to breed there. Von der Mühle obtained specimens from the hills of Platana and Malabo. Messrs. Elwes and Buckley also state that Mr. Robson obtained it near Constantinople, which is the most easterly locality where it appears to have been obtained; and I do not find any instance of its occurrence in Asia Minor or Africa, except by Loche, who obtained examples near la Calle, in Algeria; but he adds that he considers it to be an exceptional straggler.

Strictly a mountain bird during the breeding-season, the Citril Finch inhabits suitable localities in the mountains at an elevation of from about 3000 feet above the sea-level to the limit of tree-growth; and only during the autumn and winter, when driven from its elevated home by stress of weather or difficulty in obtaining food, does it leave the mountains and visit their base adjoining the plains; but, so far as I could ascertain, it is never found on the plains themselves. When at Staufen, in Baden, in June last (1875), I was informed by Mr. Schütt that it is by no means very rare in the mountains of the Black Forest, behind that town; and in order to have an opportunity of seeing it he took me up to the top of the Belchen, the second highest mountain of the Black Forest, where it is always to be met with during the summer. On arriving at the summit, where there is a tolerably comfortable inn, the elevation being nearly 4800 feet above the sea-level, I at once went in search of the Citril Finch, which frequents the edge of the fir-woods which clothe the sides of the mountain up to within a short distance of the summit. However, after climbing and scrambling for several hours until late in the evening, and seeing nothing but Water-Pipits, Titmice, a Sky-Lark, a few Tree-Pipits, &c., I returned to the inn somewhat disappointed; for the innkeeper, who knows the bird well, assured me that he had seen the birds that day, and that he knew of a nest from which the young had flown about a week previously. Whilst sitting at the open window, waiting until some food could be prepared, and admiring the magnificent panorama before me, my attention was called by my companion to the melancholy call-note of a bird; and the next minute a pair of Citril Finches perched on the hand-rail in front of the inn, not ten paces from the window, and the next moment flew off to a stone fence a little further distant. To seize my gun and knock over the nearest bird was the work of an instant; but unfortunately the second bird, the male, flew off

and was not seen again. The next morning we were up at daybreak; but in spite of the most careful search we could not see another specimen, though several Water-Pipits were obtained both in adult and young plumage, the latter so young that they could not have left the nest many days previously. After breakfast we passed along the mountains, visiting the most likely spots, until we reached the Kälberscheuer (literally calf-house); but, though we once or twice heard and saw Citril Finches, we did not succeed in getting a shot at one, and, indeed, found them extremely shy. The summit of the Kälberscheuer, like most of the mountains, is bare of trees; and in the midst of the grass and bush-covered plateau a large building is placed, in which is a dwelling-house and hay-loft, the rest of the building being occupied by cows. Before leaving the woods we remained a few minutes to watch several Citril Finches which were flying from tree to tree, keeping, however, to the tops of the high firs; but we could not get within range, and gave up the pursuit in order to refresh ourselves with a bowl of fresh milk. On arriving near the house we observed a small flock of birds fly up from a field of high grass; and one, which perched on the fence within range, was at once shot, and proved to be a young Citril Finch, which could not have left the nest more than a week previously. The herdsman who came to meet us told us that for some time past numbers of Citril Finches had regularly visited his field to feed on the seeds of the various kinds of grass and weeds, the latter of which were quite as numerous as the grass. He assured us that he had tried hard to find the nests, which were doubtless placed in the high fir trees not far distant, but that, owing to the rugged nature of the ground and the dense forest-growth, he had been unable to find a single nest. The first brood had flown; and he had remarked that some of the old birds were collecting materials for a second nest, for they came regularly to the dog-kennel to obtain the woolly hair cast by a rough thick-coated dog he kept chained there. Having been supplied with fresh milk, we sat down; and ere long the Citril Finches returned, and in about an hour's time we shot seven specimens, and could have obtained more had we required them; for not less than forty or fifty birds were continually flying about and dropping down amongst the high grass and docks so soon as we were out of the way. By creeping amongst the grass I succeeded in approaching within five or six paces of several which were too busy feeding to notice my close proximity. They were climbing about the grass-stems and dock-plants precisely after the manner of Goldfinches, now so low down amongst the grass that I could not see them, and now clinging to the head of a grass-stem picking out the seeds, and bringing the grass down quite low with their weight. So long as I remained tolerably quiet, only watching them with a field-glass, they appeared not to notice my presence; but the moment I rose up from the ground they all flew off with extreme swiftness, uttering a melancholy twittering note.

The flight of the Citril Finch somewhat resembles that of the Goldfinch, though it is a much swifter bird on the wing; but when dropping down on a field of grass it drops suddenly like the latter species. In many ways, however, the Citril Finch reminded me not a little of the Siskin, especially when I met with it in the woods, or rather on the edge of the woods; for it only frequents the outer fringe of the dense woods, or places where the trees stand well apart, or where there are a few large fir trees scattered amongst the bushes; and Mr. Schütt informs me that it never frequents the non-evergreen groves, but is only to be met with where fir trees are abundant, and its nest is almost always placed in one of these. I had no opportunity of hearing

its full song; but a somewhat disconnected song I heard uttered by one I shot gave promise of much more melody than can be discovered in the song of the Serin Finch. Mr. Schütt informs me that its song is clear and sweet, and has some affinity with that of the Canary, and also with the song of the Siskin.

Unfortunately I did not succeed in finding a nest, owing chiefly to the extremely rugged nature of the ground, and the short sojourn I made there. It is, the shepherds told me, placed like that of the Serin Finch, on the branch of a tree, usually a fir, and, being small, is very difficult to find. It is either placed high up in the tree or else only a yard or two from the ground. Naumann says that it occasionally builds under the eaves of the roofs of the shepherds' huts; but the herdsmen in the Black Forest told me that they had never known the nest to be placed anywhere except in a tree. A nest I had sent to me from Switzerland is rather larger and scarcely so neatly made as that of the Serin Finch, and is constructed of fine roots and a few grass-bents, intermixed with a little grey moss, and neatly lined with very fine hair-like rootlets intermixed with a little thistle-down and a very little wool. It appears that two broods are raised in the season; for, as above stated, I met with many very young birds in June, and the old ones were making arrangements for a second brood. I examined the crops and stomachs of those I shot, and found no trace of any thing but seeds. Some of the young birds I obtained were in the first plumage, and could not have long left the nest.

The eggs of this Finch, of which I possess several clutches from Switzerland, resemble small Goldfinches' eggs, being white with a pale sea-green or blue-green tinge, sparingly marked here and there with a pale red shell-blotch or a small dark red dot, but round the larger end marked with a wreath of pale red shell-blotches and deep brownish surface-spots, this wreath being much more strongly developed in some than in others. In size they vary from $\frac{24}{40}$ by $\frac{1}{2}$ inch to $\frac{28}{40}$ by $\frac{19}{40}$ and $\frac{29}{40}$ by $\frac{1}{2}$ inch.

The specimens figured on the first Plate are an old male shot just after the autumn moult, when in its best plumage, and a young bird, both from Baden; and on the second Plate I have deemed it advisable to figure the specimens obtained at Corsica by Lord Lilford, never having seen it figured in that plumage.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Staufen, Baden, October. *b*, ♂. St. Blasien, October 12th, 1855 (*E. Schütt*). *c*, ♀. Belchen, Baden, June 14th, 1875 (*H. E. D.*). *d*, ♀, *e*, *f*, ♀, *g*, ♂, *h*, *i*, *j*, *k*, *l*, ♂, *m*, *juv.*, *n*, *juv.*, *o*, *juv.*, *p*, *juv.* ♀. Kälberscheuer, Baden, June 1875 (*H. E. D.*). *q*, ♂, *r*. Switzerland (*Nager Donazian*).

E Mus. Howard Saunders.

a, ♂, *b*, ♀. Near Grenoble, France. *c. juv.* Near Madrid, autumn of 1869 (*Sanchez*).

E Mus. Lord Lilford.

a, ♂, *b*, ♀. Corsica, February 1875 (*L.*).



SISKIN.
CHRYSOMITRIS SPINUS.

CHRYSOMITRIS SPINUS.

(SISKIN.)

Carduelis ligurinus, Brisson, Orn. iii. p. 65 (1760).
Fringilla spinus, Linn. Syst. Nat. i. p. 322 (1766).
Emberiza spinus (L.), Scop. Ann. I. Hist. Nat. p. 144. no. 212 (1769).
Fringilla fasciata, P. L. S. Müller, Natursystem, Suppl. p. 165 (1776).
Le Tarin, Montb. Hist. Nat. Ois. iv. p. 221 (1778).
Linaria spinus (L.), Leach, Syst. Cat. M. & B. Brit. Mus. p. 15 (1816).
Spinus viridis, Koch, Baier. Zool. i. p. 235 (1816).
Serinus spinus (L.). Boie, Isis, 1822, p. 555.
Carduelis spinus (L.), Steph. in Shaw's Gen. Zool. xiv. i. p. 33 (1826).
Chrysomitris spinus (L.), Boie, Isis, 1828, p. 322.
Spinus alnorum, C. L. Brehm, Vög. Deutschl. p. 284 (1831).
Spinus medius, C. L. Brehm, op. cit. p. 285 (1831).
Spinus betularum, C. L. Brehm, op. cit. p. 286 (1831).
Fringilla (*Acanthis*) *spinus* (L.), Keys. & Blas. Wirbelth. Eur. p. 41 (1840).
Spinus obscurus, C. L. Brehm, Vogelfang, p. 108 (1855).

Tarin, French; *Lugre*, Portuguese; *Lugano*, Spanish; *Lucarino*, Italian; *Ecora*, Maltese; *Zeisig*, *Erlen-Zeisig*, *Zeisigfink*, German; *Sijsje*, Dutch; *Grönsidsken*, Danish; *Sisik*, Norwegian; *Grönsiska*, Swedish; *Viheriävarpunen*, Finnish; *Chijic*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 485. fig. 3; Werner, Atlas, *Granivores*, pl. 48; Kjærb. Orn. Dan. taf. 28. figs. 10, 11; Frisch, Vög. Deutschl. taf. 11; Fritsch, Vög. Eur. taf. 17; Naumann, Vög. Deutschl. taf. 125; Sundevall, Svensk. Fogl. pl. 4. figs. 3, 4; Gould, B. of Eur. pl. 197; id. B. of G. Brit. iii. pl. 37; Schlegel, Vog. Nederl. pl. 30.

♂ *ad. ptil. æst.* fronte, vertice et gulâ nigris, plumis versus nucham flavo-cinereo marginatis: dorso, uropygio, scapularibus et tectricibus alarum minoribus flavo-olivaceis plumis anguste nigro-fusco striatis: remigibus nigricantibus, in pogonio externo ad basin flavis et versus apicem eodem colore angustè marginatis, secundariis latiùs flavo marginatis: tectricibus alarum majoribus nigris, conspicuè flavo apicatis: supracaudalibus flavis et viridi-olivaceis, caudâ flavâ nigro-fusco terminatâ, rectricibus centralibus magis nigro-fusco notatis, et rectrice extimâ utrinque in pogonio externo fere omnino nigro-fuscâ: capitis lateribus, striâ superciliari, gutture et pectore flavis, regione paroticâ olivaceo lavatâ, corpore reliquo subtùs albido-flavo tincto, hypochondriis cinereo lavatis et nigro-fusco striatis: pedibus fuscis: iride fuscâ: rostro sordidè carneo, versus apicem nigro-corneo.

♀ *ad.* mari dissimilis: corpore suprà sordidiore, striis nigro-fuscis sordidioribus et majoribus: pileo haud nigro sed sordidè viridi-olivaceo, nigro-fusco striato: nuchâ et striâ superciliari flavis: capitis lateribus pallidè

flavo-olivaceis, indistinctè fusco striatis: gulâ, gutture et corpore subtùs albis, nigro-fusco striatis, pectore vix sulfureo tincto.

♂ *ptil. hiem.* sordidior, pilei plumis cinereo marginatis et maculâ in gulâ fere omnino occultatâ.

Adult Male in spring (Stockholm, Sweden, 14th April). Crown deep black, the feathers towards the nape slightly edged with yellowish grey; back, rump, scapulars, and lesser wing-coverts dull olivaceous yellowish green, the feathers having dull narrow blackish brown central streaks; quills blackish, on the outer web narrowly margined with yellow, except towards the base, where the whole outer web is yellow, the secondaries more broadly margined towards the tip; larger wing-coverts blackish, broadly tipped with yellow; upper tail-coverts yellow, except those nearest the tail, which are bright olivaceous green; tail yellow, broadly terminated with blackish brown, this colour extending over a much greater area in the two central rectrices, and covering nearly the whole outer web of the outermost one on each side; sides of the head and neck, a streak over the eye, the throat and breast yellow, the ear-coverts washed with olivaceous; a small patch of black extends from the chin to the upper throat; rest of the underparts whitish, on the lower breast washed with yellow, flanks washed with grey, and narrowly streaked with blackish; legs dull brown; iris dark brown; bill dull flesh-colour, becoming blackish towards the tip. Total length about 4·5 inches, culmen 0·45, wing 2·8, tail 1·85, tarsus 0·5.

Adult Male in autumn (Aboyne, 23rd September). Differs from the above in having the plumage rather duller, the feathers on the crown broadly margined with dull ashy grey, and the patch on the chin scarcely visible.

Adult Female in spring (Stockholm, 14th April). Differs from the male in having the upper parts much duller, the streaks on the feathers not so dark and broader; the black on the crown is wanting, the crown being dull olive-green with dark central streaks; nape and a streak over the eye yellowish; sides of the head dull light yellowish olivaceous, indistinctly streaked with greyish brown; underparts white, streaked, chiefly on the flanks, with blackish brown, and slightly washed with sulphur-yellow on the breast.

Nestling (Stockholm, 17th August). Head and neck buffy grey, broadly streaked with blackish brown; upper parts warm buff, broadly streaked with blackish brown, and without any shade of yellow, the markings on the wings also warm buff, except on the primaries, where they are dull light yellow; underparts buffy white with a faint sulphur tinge, the throat and breast marked with broad elongated spots, and the flanks streaked with blackish brown.

The Siskin (or Aberdevine, as it is also called with us) is found generally throughout Europe, breeding in Northern and in the northern portions of Central Europe, visiting the southern countries during winter, at which season it is also met with in North Africa. It inhabits Asia as far east as China and Japan, but is not found in America. With us in Great Britain it is a resident, breeding in the northern portions of our island and occasionally, though rarely, in the central and southern districts, which latter it usually visits during winter, at which season it appears to be generally distributed throughout the southern counties. Mr. Mansel-Pleydell states that it visits Dorsetshire periodically in autumn and leaves again for the north in spring. It is frequently met with in Kent, Surrey, and Middlesex in the spring and autumn; and Mr. Stevenson says that it visits Norfolk regularly towards the end of the autumn, and again late in January, but its numbers vary considerably in different seasons. Mr. Metcalfe informs me

that it is, as a rule, a rare winter visitant in Westmoreland and Cumberland, but that in November 1872 a cottager at Kendal brought one to him which he had knocked down with a sod out of a flock which were feeding on the groundsel in his garden. Referring to the instances of its having been found breeding in England, Mr. A. G. More writes (Ibis, 1865, p. 128) as follows:—"The Rev. O. Pickard-Cambridge tells me that he once found a Siskin's nest in a furze-bush close to a fir-plantation, near to Bloxworth, Dorset. Meyer mentions a nest taken in Combe Wood. The bird is considered to have bred near Oxford (*Rev. A. Mathews*), and has been seen near Gloucester in the month of May. The nest has been found in Lancashire (*Yarrell*), near Walton Hall (*Mr. Charles Waterton*), in Durham (*Mr. J. Hancock* and *Rev. H. B. Tristram*), and in Westmoreland, according to Bolton, as quoted by Montagu." In Scotland it appears to be more common than in England, especially during the breeding-season. Mr. R. Gray writes (B. of W. of Scotl. p. 146) as follows:—"Thirty years ago this pretty little bird was a well-known winter visitant in some parts of Lanarkshire; but from all I can learn it is now much less common, or at least not so steady in its times of appearance. In certain seasons it may still be said to be plentiful in the neighbourhood of Glasgow, where, however, the flocks are very soon thinned by the professional bird-catchers. The same may be said of its visits to other counties in the west of Scotland, with the exception, perhaps, of Argyleshire and Sutherlandshire; in some parts of the last-named county it appears to be resident all the year. But it is doubtful if the Siskin has yet been recognized on the western side of Sutherland, although Mr. St. John states in his 'Tour' that it is in almost every wood during spring and summer. Mr. Brown has informed me that it is certainly not known in the district of Assynt, but that it breeds plentifully in the woods at Dunrobin Castle. He has likewise found it breeding on the banks of the Dee, in Aberdeenshire. As a rule the nesting localities for the Siskin are situated in the eastern counties of Scotland. Its nest has been taken near Glasgow, in Kirkcudbrightshire, in Perthshire, and in Dumfriesshire—all of which districts are, no doubt, exceptions to that rule; but as the main flocks assemble on the north-eastern counties previous to quitting our shores, it is more natural to find stray parties remaining there, especially should the general outset be delayed by adverse weather. From Berwickshire to Caithness therefore the migratory flocks are extremely numerous in some seasons, appearing in the autumn before the foliage has been blown off the trees, and again in March and April just before leaving. I saw a number of Siskins, evidently mated, in the woods of Altyre, near Forres, in the beginning of May 1870. In East Lothian I have met with pairs in June at Dunbar and elsewhere; and I have records of its having bred in that county, and in Fifeshire, Forfarshire, and Kincardineshire. Generally speaking, the flocks are largest in severe winters."

Mr. J. A. Harvie-Brown says that it breeds in the east of Sutherlandshire, where, though not plentiful, it is not an uncommon species. I do not find it recorded from Orkney; but Mr. Saxby says that it is a scarce winter visitant to Shetland, making its appearance sometimes in small flocks, but more frequently in twos and threes. In Ireland, Thompson says, it can only be noted positively as an occasional winter visitant.

It does not appear to have been met with in Iceland or the Færoes, but is common in Scandinavia. In Norway, Mr. Collett says, it is chiefly found in the conifer-woods in the southern and eastern stifts, and breeds commonly up as high as the Trondhjemsfiord, and has been met

with in Stördal. On the west coast it occurs sparingly in the conifer-woods, as at Etne and on the Söndfiord. On the fell-sides it sometimes ranges up to the birch-region, and has been observed on the Hemsedalsfjeld and the Dovre.

Professor Sundevall says that during the summer season it is generally distributed throughout Sweden, but is rare in Lapland, and does not range above the conifer-growth. In summer it is rare in Skane, but common in the winter. I found it very common throughout Finland; and Von Wright thinks that a few may remain over winter, as he has observed them very early in the spring near Kuopio. I have received specimens from near Archangel, where it is said to be common; and Mr. Sabanäeff informs me that it sometimes breeds in the Moscow and Jaroslaf Governments, and is seen in large numbers during passage. It sometimes remains over winter in Central Russia. In the Ural it was met with by Mr. Sabanäeff throughout the conifer-woods in the Perm Government. It is generally distributed throughout Poland, the Baltic provinces, and Germany during the autumn and winter, and breeds in some localities. Mr. A. von Homeyer says (J. f. O. 1870, p. 222) that it breeds in the Görlitz and Glogau woods, in the former of which he saw them flying about with nesting-materials in their bills, but could not find a nest. In the Glogau woods a sportsman captured a female, which laid an egg on the day after her capture; and, Mr. Homeyer adds, the Siskin certainly breeds in the forests of Darmstadt. Kjærbölling says that it is somewhat rare in Denmark, where, in the summer, it frequents the conifer-woods, and in winter is found in flocks, chiefly where birches and alders are common. It occurs in Holland, and is said to breed in Gelderland; and in Belgium and the north of France it is of annual occurrence in autumn, and large numbers remain throughout the winter, leaving in April. Only a few pairs breed in the wooded mountains of the Ardennes.

It is stated by Professor Barboza du Bocage to be rare in Portugal, and it is an uncertain winter visitant to Spain. Colonel Irby writes (Orn. Str. Gibr. p. 123) that "in Andalucia they are very irregular in appearance, in some winters not being noticed at all. The Spaniards say they only come every seventh year. This idea is prevalent about Seville, as well as near Gibraltar, but is, I need not say, a popular error. In the winter of 1870–71 they were plentiful wherever there were any alder trees; and I saw some as late as the 4th of April. In the two previous winters, and during the one following, none were obtained by the bird-catchers, who are always looking out for them, as they are much desired and fetch a good price as cage-birds. During my last visit I saw four on a cotton-poplar tree in the Alameda at Gibraltar, on the 24th of March; they were so tame as to allow of my approach within a yard of them, and remained for a long time close to me." It is said to be abundant in Savoy in the spring and summer months in suitable localities; and some breed on the southern slopes of the Alps, in the more elevated portions of Lombardy. In most districts in Italy, however, it is only an autumn and winter visitant, and is of somewhat irregular occurrence in Sicily. Cara says that it visits Sardinia regularly during passage; but Mr. A. B. Brooke remarks that he never met with it there either in the spring or the autumn. It is found in Malta during passage; and Lord Lilford states that it is abundant in Epirus in winter, at which season it is, Dr. Krüper says, common in Greece. He met with it in Acarnania, in the Parnassus, on the Isthmus in Attica, and at Taygetos. In the winter of 1873–74 many were caught near Athens. It breeds in Southern Germany; and Dr. Fritsch says that its nest has been found in the Zavis valley, near Prague. In winter large

flocks are found in Bohemia. Mr. Seidensacher informed me that it arrives in Styria in October and November in flocks, and remains over winter. Some also breed on the Bacher, but none near Cilli. It is found throughout the Austrian dominions, chiefly during passage or in winter; but Count Casimir Wodzicki states that it is resident in the Carpathians, and breeds there as high as the conifer-woods extend, rearing two broods in the year. It is recorded from Turkey, where it occurs during passage and in winter; and is found in considerable numbers in Southern Russia. Von Nordmann states that it visits the gardens in the steppes in large numbers, but he does not believe that it breeds anywhere in the neighbourhood of Odessa. The majority leave in November, and reappear in February.

Dr. Krüper says that it is found during winter in Asia Minor, and numbers are caught every season near Smyrna. It was not met with by Canon Tristram in Palestine; nor do I find it recorded from North-east Africa; it is stated to be of rare and accidental occurrence in Algeria during severe winters; and Mr. C. F. Tyrwhitt-Drake records it from Tangier and Eastern Morocco; but neither M. Favier nor Colonel Irby has met with it on the south side of the Straits of Gibraltar. Dr. Carl Bolle states (J. f. O. 1857, p. 317) that it is a rare visitant to the Canaries; and Messrs. Webb and Berthelot record it from Teneriffe; but Mr. Godman did not meet with it there.

To the eastward it is found as far as Japan. Mr. Blanford informs me that it has not been observed in Persia, elsewhere than in the forest region south of the Caspian. It does not occur in India, but was met with in Siberia by Von Middendorff and Radde. The former says that an adult male was shot at Udskoj-Ostrog on the 4th May; and Dr. Radde met with it in flocks in August in the Bureja Mountains. Mr. Swinhoe says that it is found in China, occurring at Pekin in autumn, and in winter down to Foochow; he also met with it in Chefoo in May. Captain Blakiston obtained it in Japan; and Mr. Whitely writes (Ibis, 1867, p. 201) as follows:—"Two specimens obtained—one in December 1864, the other in November 1865. Common in the plantations and woods near Hakodadi. It is a favourite cage-bird among the Japanese."

The Siskin is essentially a forest-loving bird, inhabiting during the summer season conifer-woods, especially those in hilly localities; and its abundance or otherwise in a locality appears to be regulated chiefly by the supply of conifer-seeds, on which it chiefly feeds. In the autumn it leaves the conifer-woods and wanders about in the lowlands from then until the spring. During the winter it is found in groves, in the fields, especially where groundsel and other seeds are abundant, gardens, &c. &c., and is often found in large flocks. It is essentially companionable, and even during the breeding-season is seldom found in single pairs. Nor is it a shy bird, and will usually let one approach tolerably close to it. During the spring it is easily caught, especially when a decoy bird is used in a cage-trap; and I used often to catch them when in Finland with a bow-net and a small cage with a call-bird. It is active and restless, always on the move in search of food, and usually frequents the upper branches of the trees, but seldom coming down to the ground. The call-note is a loud *deedel* or *deedlee* or *dee*, and its usual note *trettel tetter tettel*. The song consists of a succession of twittering notes, rather prolonged towards the close, and is aptly rendered by Naumann by the syllables *dididlidlideidääh*. When singing, the male rises from the summit of a tree, circles about in the air, and drops again onto the tree; and it also utters its song when sitting on a spray at the top of a tree.

I found it breeding in the fir-woods in Finland late in April or early in May; but the time of nidification appears to vary somewhat. Mr. Collett writes to me that in Norway it is as irregular as regards the time of nidification as the Crossbill; for in some seasons, when the seeds of *Abies excelsa* are plentiful, it breeds in March or April, when the snow is still in the woods; and in other seasons, when the seed-crop is short, it does not nest until May or June. In 1863 he found several nests containing young in the middle of April; so that the eggs must have been deposited in March. The nests are built in a juniper- or spruce-bush in open parts of the forest, and are constructed of spruce-twigs and bents, carefully lined with the cotton of the *Salix* and a few feathers. The young are fed chiefly with aphides; and their parents continue to feed them for some time after they are fully grown. The nest is usually carefully concealed; and from that circumstance and its small size it is exceedingly hard to find. Both the male and the female assist in its construction, and will sometimes commence a nest and then leave it, and recommence their labours, until they find the structure to their liking. The number of eggs deposited varies from four to five, and sometimes six. I possess but one clutch, obtained near Uleåborg, in Finland. They are pale greenish or sea-green, minutely spotted, chiefly round the larger end, with pale red. In size they average $\frac{27}{40}$ by $\frac{19}{40}$ inch.

The specimens figured are an adult male and a female in spring plumage, both being in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, ♂. Hampstead, December 15th, 1871 (*Davy*). *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*. Aboyne, September 23rd, 1871 (*R. B. Sharpe*). *n*, ♂, *o*, ♀, *p*, ♀. Stockholm, August 17th, 1871 (*Meves*). *q*, ♀, *r*, ♂, *s*, ♂, *t*, ♀. Stockholm, April 14th, 1872 (*Meves*). *u*. Spain (*Irby*).

E Mus. Howard Saunders.

a, ♂. Valencia, January 19th. *b*, ♂, *c*, ♀. Valencia, February 6th. *d*, ♂. Granada, March. *e*, ♂. Granada, April. *f*, ♂, *g*, ♀, *h*, ♂. Malaga, November 10th and 27th.

E Mus. C. A. Wright.

a. Malta, October (*C. A. W.*).

Genus SERINUS.

Passer apud Brisson, Orn. iii. p. 179 (1760).
Fringilla apud Linnæus, Syst. Nat. i. p. 320 (1766).
Loxia apud Scopoli, Ann. I. Hist. Nat. p. 140 (1769).
Serinus, Koch, Baier. Zool. i. p. 229 (1816).
Carduelis apud Lesson, Traité d'Orn. p. 443 (1831).
Crithagra apud Swainson, Classif. of B. ii. p. 294 (1837).
Dryospiza apud Keyserling & Blasius, Wirbelth. Eur. p. xli. (1840).
Emberiza apud Blyth, J. As. Soc. Beng. xvi. p. 476 (1847).
Pyrrhula apud Degland, Orn. Eur. i. p. 193 (1849).
Oraegithus apud Cabanis, J. f. O. 1854, Erinnerungsschr. p. 94.
Metoponia apud Bonaparte, Cat. Parzud. p. 3 (1856).

The Serin Finches differ considerably from *Carduelis* and *Chrysomitris* in the form of the bill, which approaches much nearer to that of the Greenfinches; I have therefore deemed it advisable to place them next before the genus *Ligurinus*. In general habits the Serin Finches do not appreciably differ from the Siskin and Citril Finch; but, as a rule, most of the species affect the plains and cultivated places rather than the mountains, groves, and conifer-woods. Four species inhabit the Western Palæarctic Region; but the genus is also represented in the Eastern Palæarctic, Oriental, and Ethiopian Regions. Of these four species one, *Serinus pusillus*, has by many authorities been separated generically; and in habits and general appearance it exhibits some slight differences from the true Serin Finch, but not sufficient to warrant its being placed in a separate genus. It is said to affect mountains and conifer-woods much more than its allies do, and is always found at greater altitudes than the Serin Finch.

The species included in the genus *Serinus* build more or less carefully constructed cup-shaped nests, which they place in a tree or bush, the materials used being mosses, grass bents, wool, feathers, &c., and they deposit several eggs, which in general character resemble those of the two preceding genera.

Serinus hortulanus, the type of the present genus, has the bill short, stout, conical, broad at the base; nostrils basal, round, hidden by stiff frontal feathers directed forwards; gape straight, without bristles; wings moderately long, rather pointed, the first quill very small, being scarcely visible, the second, third, and fourth nearly equal, the second being the longest; tail moderate in length, deeply forked; tarsus and toes rather slight and weak, the former covered in front with four plates and three inferior scutellæ; claws rather weak, curved, acute, laterally grooved.



SERIN FINCH.
SERINUS HORTULANUS.

SERINUS HORTULANUS.

(SERIN FINCH.)

Passer serinus, Briss. Orn. iii. p. 179 (1760).
Fringilla serinus, Linn. Syst. Nat. i. p. 320 (1766).
Loxia serinus (L.), Scop. Ann. I. Hist. Nat. p. 140. no. 205 (1769).
Fringilla montana, Bodd. Tabl. des Pl. Enl. p. 40 (1783).
Fringilla citrinella, Bechst. Orn. Taschenb. i. p. 124 (1802, nec Linn.).
Serinus hortulanus, Koch, Baier. Zool. i. p. 229 (1816).
Loxia serinus, an nov. sp.? Fab. Isis, Suppl. 1824, p. 792.
Serinus orientalis, C. L. Brehm, Vög. Deutschl. p. 254 (1831).
Serinus meridionalis, C. L. Brehm, op. cit. p. 255 (1831).
Serinus islandicus, C. L. Brehm, op. cit. p. 255 (1831, ex Faber).
Serinus flavescens, Gould, B. of Eur. pl. 195 (1837).
Pyrrhula (Dryospiza) serinus (L.), Keys. & Blas. Wirbelth. Eur. p. xli. (1840).
Pyrrhula serinus (L.), Degland, Orn. Eur. i. p. 193 (1849).
Serinus hortulorum, Drake, Ibis, 1867, p. 427, *laps. cal.*
Crithagra serinus (L.), Heugl. Orn. N.O.-Afr. i. p. 647 (1871).
Serinus luteolus, A. von Homeyer, J. f. O. 1873, p. 223.

Serin, French; *Chamariz*, Spanish; *Verzellino*, Italian; *Apparell*, Maltese; *Girlitz*, *Hirngrille*, *Cinit*, German; *Guulirisk*, Danish.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 658. fig. 1; Werner, Atlas, *Granivores*, pl. 42; Kjærb. Orn. Dan. taf. xxvii.; Fritsch, Vög. Eur. taf. 17. fig. 9; Naumann, Vög. Deutschl. taf. 123; Gould, B. of G. Brit. iii. pl. 38; Bechst. Orn. Taschenb. taf. 15.

♂ *ad.* fronte, lineâ superciliari, gulâ et pectore lætè flavis: pileo postico, nuchâ et capitis lateribus saturatè cinereis, plumis flavido marginatis: dorsi plumis, scapularibus et tectricibus alarum centraliter nigro-fuscis, versus marginem pallidioribus et vix flavo marginatis: uropygio et supracaudalibus flavis: alis et caudâ nigro-fuscis, plumis extùs vix flavido marginatis: pectoris lateribus et hypochondriis conspicuè nigro-fusco striatis: abdomine et subcaudalibus albis vix sulfureo adumbratis: rostro corneo, ad basin pallidè carneo: pedibus brunneis: iride fuscâ.

♀ *ad.* sordidior, minus flavo notata: pileo, nuchâ et capitis lateribus dorso concoloribus: plumis in corpore suprà griseo-flavo marginatis: uropygio vix nigro-fusco striato: corpore suprà albido: pectore et gutture flavo lavatis: pectore, gutture et hypochondriis nigro-fusco striatis.

Adult Male in summer (Frankfort, 10th May). Forehead, a line over the eye, throat, and breast bright (almost golden) yellow; feathers on the hind crown, nape, and sides of the head blackish grey, more or

less margined with yellow; feathers on the back, scapulars, and wing-coverts blackish brown in the centre and paler towards the outside of the feathers, which are slightly margined with yellow; rump and upper tail-coverts bright yellow; quills and tail blackish brown, with narrow yellowish margins to the feathers; underparts rich yellow, except the lower abdomen and under tail-coverts, which are white, sometimes with a faint yellowish tinge; flanks and sides of the breast broadly striped with blackish brown; bill dark horn, lighter at the base of the lower mandible; legs brownish flesh-coloured; iris dark brown. Total length about 4·5 inches, culmen 0·32, wing 2·8, tail 2·05, tarsus 0·6.

Adult Female (Barcelona, May). Differs from the male in having much less yellow, the crown, sides of the head and nape being, like the back, dark brown, with lighter margins, and very slightly edged with greyish yellow; wing-coverts terminated with buffy white, and most of the quills with buffy white narrow margins on the terminal portion, but otherwise as in the male; tail as in the male; rump yellow, marked with blackish brown; upper tail-coverts nearly pure yellow; underparts dull white, washed with yellow on the throat and breast; throat, breast, and flanks broadly striped with blackish brown.

Male in winter (Adalia, January 15). Differs from the specimen in summer dress merely in having the yellow on the head obscured by greyish brown tips to the feathers; the back is less marked with yellow; and the wing-feathers have rather broader buffy white margins tinged with yellow; but the rump is as bright yellow as in the spring, if not brighter.

An inhabitant of Central and Southern Europe and North Africa, the Serin Finch is only a rare straggler in the northern portions of our continent, and does not occur further east than Asia Minor. It has been on several occasions obtained in Great Britain; but the question arises as to whether some of the specimens obtained were birds escaped from confinement. The first instance of its occurrence with us appears to be that of one obtained near Portsmouth in April 1852; and since then several instances have been recorded by various ornithologists. Mr. Bond cites three—one near Brighton, 20th June, 1859, one near London, October 1859, and one in April 1869. The second of these I have examined; and it certainly appears not to have been a caged bird. Mr. G. Dawson Rowley records (Ibis, 1861, p. 113) three supposed occurrences at Brighton; but as the specimens were not preserved, it is open to doubt whether they really were Serins. He examined one, however, in 1866, which he says (Ibis, 1866, p. 215) "was killed in the last week of January 1866 by William Gorett, Esq., in a small garden surrounded by trees in Bridge Street, North Town, Taunton, Somerset," and which certainly was a true Serin. Mr. Cecil Smith, who included the present species in his 'Birds of Somerset' on the strength of this specimen, tells me that he always had some doubts as to the propriety of admitting it, thinking it might be an escaped bird. Mr. Monk also records the occurrence of one at Hove, near Brighton, in April 1866; and Mr. Lucas, in 'The Field' of the 12th June, 1869, states that one was obtained at Worthing on the 4th May, 1869. It was stated by Faber (*l. c.*) to have occurred in Iceland between 66° and 67° N. lat.; but the specimen he obtained was lost, and there appears to be some doubt as to whether his identification was correct.

It has not been met with in Sweden, Norway, or Finland; nor have I any record of its occurrence in Northern or Central Russia, except that Mr. Sabanäeff believes that a bird stated to have been obtained near Moscow was a Serin Finch. It occurs in North Germany only as a

rare straggler, but has been met with in Heligoland, and is included by Kjærbölling in his work on the birds of Denmark, on the strength of examples shot at Flensborg (fide *Mecklenburg*) and at Nordskov (*E. Hage*). It is questionable if it occurs in Holland; but Baron de Selys-Longchamps speaks of it as being rare in the valley of the Meuse, but more numerous near Liége; and it has been obtained in Flanders, and breeds in Luxemburg. In the portions of Germany which skirt the Upper Rhine it is a common species in the plains, and is stated to be very numerous near Frankfort. I found it tolerably common in Baden; and it may be said to be generally distributed throughout Southern Germany. In France it is but an occasional straggler in the northern provinces, but in the central and southern districts it is tolerably numerous during the best part of the year. It occurs in Portugal, and is numerous and resident in Spain. Colonel Irby speaks of it as breeding in the cork-wood near Gibraltar. Mr. Saunders observed it in various parts of Southern Spain; and I found it very common near Barcelona in May. Mr. A. von Homeyer speaks of it as being very common in the Balearic Islands, where it frequents cultivated localities and gardens near brooks; and near San Oleza he frequently found it in the mountains, and found a nest on an old pine about 25 feet from the ground, and another nest in an ilex tree only 5 feet above the ground. In Savoy it arrives early and breeds, some few remaining, Bailly says, throughout the winter in sheltered situatians; and in Italy it is generally distributed, being especially abundant in the southern districts, and on the islands of Sicily and Sardinia during the winter months; but Mr. A. B. Brooke states that he never observed it in the southern part of the last-named island. Mr. C. A. Wright says that it is very common at Malta in October, and remains there throughout the winter.

In Southern Germany it is very generally distributed, and has gradually extended its range during the last few years, being now numerous where some years ago it was scarcely known. Dr. Rohnert remarked this especially as regards Silesia, and gives (J. f. O. 1864, p. 396) some interesting details on this question too long to insert in the present article. It is common in Bohemia; and the Ritter von Tschusi-Schmidhofen says (J. f. O. 1869, p. 236) that he twice observed it during the winter in Austria. When collecting in Styria with the late Herr E. Seidensacher, I saw and heard the Serin Finch on several occasions. Seidensacher informed me that it arrived there (at Cilli) late in March or early in April, and left in October and November, and bred in hilly localities where there were orchards, as for instance at St. Lorenzen, in Prozin, at Suetina, &c. In Greece it is, Dr. Krüper informs me, a common species, and Lindermayer says that it is resident. Mr. Danford brought specimens from the island of Rhodes, obtained there in December; and it is said to be common in Asia Minor, and not rare in Bessarabia; but it is not known to occur near Odessa. Mr. Danford obtained it near Smyrna in November; but I am unaware if it remains there to breed. Canon Tristram says (Ibis, 1868, p. 207) that he "found it only in the winter season, in the little glens and wooded districts near the sea, and never inland. Near Beyrout it is very common, but it leaves for the north in March." Mr. C. W. Wyatt observed it in Sinai; and it occurs in North-east Africa; for Von Heuglin observed it in the delta of the Nile, and near Cairo, in March, in pairs and in small flocks. In North-west Africa it is commoner than on the eastern side of the continent. According to Loche it is extremely common in Algeria during the periods of migration, and a considerable number remain to breed; and Mr. O. Salvin writes (Ibis, 1859, p. 313) that he found it

"common about the olive-groves near Sousa and other parts of Tunis, but decidedly rare in the mountainous and more elevated parts;" and Mr. J. H. Gurney, jun., says (Ibis, 1871, p. 293) that he "found it much less common at Blida than at Algiers, where some were seen consorting with Linnets, or singing from the bough of a fir-tree in a low, clear, continuous strain." Favier states (*fide* Irby, Orn. Str. Gibr. p. 123) that it is "very abundant near Tangier, both as a resident and on migration, when they are seen passing north in immense flights during February, returning in October and November."

In the islands of the coast of Africa it is replaced by the Canary (*Serinus canarius*); and in Palestine there is, besides the present species, a tolerably closely allied species (*Serinus aurifrons*, Tristr.) which is resident, whereas the present species is a winter visitant there.

The Serin Finch inhabits the foot of the mountains skirting the plains, but does not appear to affect the plains themselves; nor is it found in the mountains, being there replaced by the Citril Finch. It is usually to be met with in the orchards and gardens and in the vineyards, frequently in gardens which are surrounded by houses, in which last locality it is tolerably tame—though, so far as my own experience goes, it is very shy and difficult of approach outside the town. During the fortnight I spent at Staufen in Breisgau (Baden), in June last, I never got within range of one outside the town, though on several occasions I saw and heard it. In the town itself I several times saw specimens; but as they doubtless had nests in the neighbourhood, and as, besides, it would not well do to shoot in the town, I did not obtain a specimen. It may easily be recognized by its call-note and flight. The former somewhat resembles that of the Canary, but may easily be distinguished by any one who has heard it. Its song is poor, and lacks both depth and melody, being merely a continuous twittering warble, generally uttered, it would seem, as the bird is seated on the topmost spray of some tree, usually a fruit-tree. Its flight is exceedingly swift, and may not inaptly be compared to that of a Sand-Martin, which it far more nearly resembles than that of any other Finch. It sometimes sings whilst on the wing; that is, it will fly up from the spray on which it has been seated like a Tree-Pipit, and will continue its song during the short time it is in the air.

It feeds chiefly on seeds of various kinds; at least all those I have at different times shot, and the contents of whose stomachs I examined, had been feeding on these alone—grass-seeds and those of the various wild plants and weeds, chiefly such as are oily; and it appears always to shell the seeds and discard the husks before swallowing them. It seeks after food in fields, gardens, and especially in the vineyards, in which last it is usually to be found.

Its nest is a very neat, compact little structure, very carefully made and neatly shaped. It is built of fine roots and grass-bents, and neatly lined with feathers and horse-hair. The outer portion of the nest appears to be interwoven with spiders' webs; and a few bits of lichen and grey moss are affixed here and there. A nest in the possession of Mr. Carl Sachse, taken near Frankfort, is built in the fork between three upright small branches of a lilac tree, and is constructed entirely of fine grass-stems and rootlets, intermixed with cotton and woollen threads. These latter are utilized more especially to bind the structure to the branches, which is most effectually and strongly done, one of the branches being encircled at least a dozen times with a long piece of tolerably stout woollen thread. The lining consists merely of somewhat finer grass-stems than those used in the construction of the exterior portion. In

shape the nest is semispherical, the inside being tolerably deep cup-shaped; the external diameter is 70 millims., the internal diameter 55; the external height 60, and the depth of the internal cup 38 millims.

The eggs of this species, of which I have a series from the Upper Rhine and Styria, are white, with a pale bluish green or sea-green tinge, and are blotched and spotted with pale dull reddish and deep red, the blotches being chiefly collected at the larger end. They somewhat resemble the eggs of the Goldfinch; but the blotches are, as a rule, not so dark and more spread out. In size they measure from $\frac{26}{40}$ by $\frac{19}{40}$ to $\frac{27}{40}$ by $\frac{20}{40}$ inch.

The specimens figured are an adult male and a female, both obtained by myself near Barcelona, in Spain, in May, and are those above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Frankfort a. M., May 10th, 1874 (*C. Sachse*). *b*, ♂. San Felio de Llobrigat, near Barcelona, Spain, May 6th, 1866 (*H. E. D.*). *c*, ♂, *d*, ♂. Seville, February 27th, 1870 (*H. Saunders*). *e*, ♀. Barcelona, May 1866 (*H. E. D.*). *f*, ♂. Sardinia, April 1870 (*Salvadori*). *g*, ♂. Adalia, January 15th, 1875 (*C. Danford*). *h*, ♀. Rhodes, December 3rd, 1874 (*Danford*). *i*, ♀. Asia Minor, December 19th, 1871 (*Th. Krüper*). *j*, *k*. Africa, September (*Verreaux*).

E Mus. C. A. Wright.

a, *b*, ♂. Malta, December 30th, 1862 (*C. A. Wright*). *c*, ♂. Sicily, spring, 1870 (*C. A. Wright*).

E Mus. Charles Danford.

a, ♂, *b*, ♂. Wolla Bay, Smyrna, November 27th, 1874 (*C. D.*). *c*, ♂. Smyrna, November 28th, 1874 (*C. D.*). *d*, ♀. Rhodes, December 1st, 1874 (*C. D.*).

E Mus. Salvin and Godman.

a, *b*, ♂. Sousa, Tunis, March 3rd, 1867 (*O. Salvin*).

E Mus. Howard Saunders.

a, ♂, *b*, ♀. Valencia, January 6th. *c*, ♀. Seville, February 27th (*H. S.*). *d*, ♂. Malaga, March 22nd. *e*, ♂. Seville, March 28th. *f*, ♂, *g*, ♀. Valencia, November 26th.



TRISTRAMS SERIN.
SERINUS CANONICUS

SERINUS CANONICUS.

(TRISTRAM'S SERIN.)

Serinus aurifrons, Tristram, P. Z. S. 1864, p. 447, nec Blyth.

Figura unica.

Tristram, Ibis, 1868, pl. vii. ad. et juv.

♂ *ad.* fronte et pileo frontali aureo-flavis, pileo postico et collo postico cum dorso et scapularibus flavis fusco striatis, collari flavissimo: uropygio et supracaudalibus flavis vix griseo tinctis: remigibus nigro-fuscis, extùs lætè flavo marginatis, tectricibus alarum eodem colore conspicuè terminatis: rectricibus nigro-fuscis, in pogonio externo fere omnino flavis et in pogonio interno conspicuè albido marginatis: capite laterali pallidè griseo: corpore subtùs flavo, abdomine et subcaudalibus albidis: rostro, pedibus et iride ut in *S. hortulano* picturatis.

♀ *ad.* mari similis sed pallidiore et sordidiore.

Juv. adulto similis sed rufescente nec fronte flavâ.

Adult Male (Hermon). Differs appreciably from *Serinus hortulanus* chiefly in being much paler and yellower, the underparts unstriated, and in being larger in size; forehead, fore part of the crown, and a collar on the hind neck golden yellow; upper parts generally yellow; the hind crown, nape, back, and scapulars striped with dull blackish brown, these stripes being not strongly defined; rump and upper tail-coverts yellow with a greyish tinge; quills blackish brown, externally margined with bright yellow, the wing-coverts very broadly terminated with this colour; tail blackish brown, the feathers with the outer web almost entirely yellow, the inner web broadly bordered with dull white; cheeks dull greyish brown; underparts bright yellow, unstriped on the abdomen, and under tail-coverts fading to dull white; bill, iris, and legs as in *Serinus hortulanus*. Total length about 5·15 inches, culmen 0·4, wing 3·0, tail 2·4, tarsus 0·6.

Adult Female (Lebanon). Resembles the male, but is paler and somewhat duller in colour.

Young of the year. Differs from the adult in having the yellow colour replaced by rich russet; and the golden-yellow forehead is also wanting.

Although this beautiful Serin Finch does not appear to be at all uncommon in Palestine, yet it is, comparatively speaking, but little known: and its range is very restricted; for I can find no record of its occurrence elsewhere. Canon Tristram, who was the first to recognize it as a distinct species, and describe it, gives (Ibis, 1868, p. 207) the following information respecting it, which is, in fact, all that appears to have been published concerning this species. He says, "it is rather plentiful in the higher regions both of Lebanon and Hermon, not descending, however, lower than 4000 feet above the sea, and a permanent resident. . . . . Our first acquaintance with this pretty little bird was in the pear-orchards above Rashiey, on the north side of

Hermon, where we were attracted by its clear and varied notes, which were new to us, long before we could detect the musician ensconced in the foliage. The same afternoon we obtained four more specimens; and Mr. Bartlett succeeded in cleverly entrapping a female on her nest. There is little difference between the sexes in plumage. The nest is by no means so neat as that of the Goldfinch, and shallower, rather like that of the common Linnet; and the eggs are marked like those of the Goldfinch, but slightly larger. We afterwards met with this Serin breeding in June at the Cedars."

I am indebted to Canon Tristram for six eggs of the present species, which both in coloration and form agree closely with those of the common Serin Finch in my collection, but are larger in size, averaging $\frac{29}{40}$ by $\frac{1}{2}$ inch.

Canon Tristram says (*l. c.*) that he believes that Bonaparte's *Serinus syriacus* (Consp. Gen. Av. i. p. 523) may have been an immature specimen of this bird, but the description is vague, and in some respects incorrect; and in this view I fully agree. Bonaparte (*l. c.*) refers to it as "*Fringilla syriaca*, Hempr. & Ehr. Mus. Berol. ex As. occ. Bischerra," and describes it as follows:—"Similis *S. meridionali*, vix major, sed coloribus dilutioribus, et alis præcipue magis flavescentibus: rectricibus lateralibus dimidiatim interne albidis." On referring to the notes made by Mr. Blanford and myself on the birds in the Berlin Museum collected by Hemprich and Ehrenberg, I do not see any record of the specimen in question, which did not appear to be then in the collection. Canon Tristram, however, was unfortunate in the choice of his name for this bird, as Blyth in 1847 described *Serinus pusillus* (Journ. As. Soc. Beng. xvi. p. 476) under the name of *Emberiza aurifrons*, and again in 1849 (Cat. B. Mus. As. Soc. p. 125) under the name of *Serinus aurifrons*; therefore this name was already preoccupied, and there is no alternative but to rename it; and in so doing I cannot do better than call it after its discoverer, *Serinus canonicus*.

Respecting the habits and nidification of the present species I find nothing on record beyond what is above transcribed from the notes published by the Canon.

The specimens figured are an adult male and a young bird, the former from the collection of Messrs. Salvin and Godman, and the latter from that of Canon Tristram. As the female so closely resembles the male, I have not deemed it necessary to figure it.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Lebanon, June 15th, 1864 (*H. B. Tristram*).

E Mus. Salvin and Godman.

a, ♂. Rashiey, Hermon, Palestine, June 6th, 1864. *b*, ♂ *ad.* Palestine, June 3rd, 1864 (*Tristram*).

E Mus. H. B. Tristram.

a, ♂, *b*, ♂. Foot of Hermon, June 2nd & 3rd, 1864. *c*, ♀. Foot of Hermon, June 4th, 1864. *d*, *juv.* Cedars of Lebanon, June 16th, 1864 (*H. B. T.*).



J.G.Keulemans lith.

Hanhart imp

CANARY.
SERINUS CANARIUS.

SERINUS CANARIUS.

(CANARY.)

Passer serinus canarius, Briss. Orn. iii. p. 184 (1760).
Fringilla canaria, Linn. Syst. Nat. i. p. 321 (1766).
Serin des Canaries, Buff. Hist. Nat. Ois. iv. p. 1 (1778).
Carduelis canaria (L.), Less. Traité d'Orn. p. 443 (1831).
Crithagra canaria (L.), Swains. Classif. of B. ii. p. 294 (1837).
Serinus canarius (L.), Cab. Mus. Hein. i. p. 163 (1850–51).
Serinus hortulanus, Godm. Ibis, 1866, p. 98, nec Koch.
Dryospiza canaria (L.), G. R. Gray, Hand-l. of B. ii. p. 83 (1870).

Figuræ notabiles.

Webb & Berth. Voy. Canar. tab. 2; Bolle, J. f. Orn. 1858, taf. 1.

♂ *ad.* pileo viridi-flavo nigro-fusco striato: dorsi plumis nigro-fuscis valdè cinereo marginatis et vix viridi-flavo lavatis: uropygio viridi-flavo: supracaudalibus dorso concoloribus: remigibus nigro-fuscis, primariis viridi-flavo anguste marginatis, secundariis intimis cervino marginatis: tectricibus alarum nigro-fuscis viridi-flavo marginatis et terminatis: rectricibus nigro-fuscis, angustè pallidè flavo-cervino marginatis: capitis lateribus sordidè flavidis: mento, gulâ, gutture et corpore subtùs aurantiaco-flavis, abdomine imo et subcaudalibus flavo-albidis, hypochondriis nigro-fusco striatis: rostro et pedibus brunnescenti-carneis: iride fuscâ.

♀ *ad.* ubique sordidior et magis fusco colorata: pileo cinereo, fusco striato et vix flavido tincto: alis minus flavido tinctis: corpore subtùs albido-cervino, gulâ, pectore et abdomine centraliter viridi-flavido tinctis.

Adult Male (Orotava, Teneriffe, 7th April). Crown greenish yellow or apple-green, finely striped with blackish brown; feathers on the back blackish brown, broadly margined with ashy grey, and slightly marked with apple-green; rump bright apple-green; upper tail-coverts like the back; quills blackish brown, the primaries narrowly edged with apple-green, the inner secondaries margined with buff; wing-coverts blackish brown, margined and tipped with apple-green; tail blackish brown, the feathers having light margins; sides of the head dull apple-yellow; chin, throat, and underparts rich dark golden-yellow, becoming paler and almost white on the lower abdomen and under tail-coverts; flanks striped with blackish brown; bill and legs fleshy brown; iris brown. Total length about 5 inches, culmen 0·38, wing 2·9, tail 2·55, tarsus 0·72.

Adult Female (Teneriffe, 28th April). Differs from the male in having very much less greenish yellow in the plumage; the crown is grey, striped with blackish, and scarcely marked with greenish yellow; the wings are also scarcely marked with that colour; but the rump is washed with apple-green; underparts buffy white in place of yellow, washed with apple-yellow on the throat, breast, and centre of the abdomen.

Nestling (*fide* Bolle, J. f. O. 1858, p. 151). Upper parts brownish grey, marked with indistinct blackish

shaft-stripes; an indistinct ochreous grey stripe over the eye; sides of the head, neck, and upper breast ochreous grey, on the fore part of the face and throat tinged with pale yellow; lower breast pale yellowish, fading into white on the abdomen; flanks and crissum yellowish grey; rectrices blackish, on the underside broadly margined with greenish yellow, and on the upper with yellowish grey; wings crossed by two bars, the larger and smaller coverts being tipped with yellowish grey; quills blackish, edged with greenish grey; shoulders and some of the smaller wing-coverts pale yellowish green; iris blackish brown; bill horn-colour, the under mandible paler; legs blackish brown. The entire plumage is in general blurry in coloration, more so than in the nestling of the Siskin.

Obs. According to Dr. Bolle the male in the first year after its birth wears a plumage closely resembling that of the female, and the full adult plumage, as described above, is not obtained until its second year.

This, the original stock from which the tame Canary, so commonly known as a cage-bird, has sprung, is a smaller bird than its caged relative, and in general plumage much resembles the Serin Finch. It is found only in the Canaries, Madeira, and the Azores, where it is common in suitable localities. Dr. Bolle says that it inhabits the Canaries, as a constant breeding-resident, only as far as about the Peak of Teneriffe, and it is not found nesting even on the eastern side of Gran Canaria. Fuertaventura and Lanzarote are too bare of trees and water to permit of its breeding there; but in winter flocks sometimes straggle as far as these places and Gran Canaria. On the west side of the fruitful island of Gran Canaria it is generally found inhabiting the "pinal" or pine-woods. It is said to be common near the town of Teror and the Montaña de Doramas; but it is, on the whole, rarer in Canaria than in Teneriffe, and only scattered pairs are found on the eastern spurs of the mountains. It is common in Madeira; and numbers are to be seen in the gardens of Funchal; but it does not appear to be known whether wild Canaries are found on the island of Porto Santo. Dr. Bolle says that, as this island is so bare and dry, he doubts if the present species occurs there. Mr. F. D. Godman says (Nat. Hist. Az. p. 29) that it is "found in abundance throughout the Azores. It frequents the cultivated lands, where it feeds on the seedcrops, and is especially destructive to the flax. From its well-known powers of song it is often caught and tamed, a great many being sold on board vessels which touch at the islands for provisions. In Fayal these birds congregate towards evening in considerable numbers about a small hill near Horta, and fly across in a body to the island of Pico; for what reason I do not know, as there is no want of trees in the neighbourhood." Dr. Carl Bolle has published (J. f. O. 1858, pp. 125–151) a most exhaustive history of this bird, from which I extract the following particulars respecting its habits &c. It frequents, he says, the southern portions of the islands, and places where the temperature is not variable. It is usually found on the western mountainous portions of the islands, where there is an abundant tree-growth, and where the sea-winds make the atmosphere slightly damp. On Teneriffe, Palma, Gomera, and Ferro it is numerous, and is usually found where the thickets are not too dense. It breeds usually near water, but not exclusively. In the Canaries there are no regular rivers, but there are small mountain-streamlets, which, during the wet season, flow swiftly down into the valleys, and thence to the sea; but in the summer and autumn these brooks are so small that they gradually disappear as they reach the valleys, and form only damp spots here and there in the dry country. Near these the Canary breeds, but also in localities far from any running water, though only in

places where there are scattered high trees and tolerably open brushwood. It ranges from the coast up to an altitude of 5000 to 6000 feet in the mountains; but it is entirely wanting in many parts of the intervening country. It breeds in the gardens of the densely peopled towns as well as in the most solitary portions of the island; but it is essentially a frequenter of trees. The dense laurel-thickets it does not appear to affect, or at least it only seems to occur on the outskirts; but the vineyards, in which fruit-trees are scattered about, are usually frequented by these birds, more especially because they are warm and sunny, and the Canary loves a warm sunshiny place. The large forests of the Canarian pine (*Pinus canariensis*) are also warm in the summer season; and here Dr. Bolle also found the present species breeding, and states that it certainly breeds in the Pinal, on the Teyde, usually nesting on young pines, but he is doubtful as to whether it remains there in the winter season. Berthelot met with Canaries, however, in large flocks in September 1852 close below the summit of the island of Palma, at an altitude of nearly 6000 feet, where the pine ceases to grow and is replaced by codeso-thickets intermixed with a few straggling cedars.

Nidification commences in March, usually in the latter part of that month. The nest is seldom built lower than about eight feet from the ground, and often much higher, slender young trees being usually selected for nidification, and especially such as are evergreen or have foliage early. The pear- or granate-tree is most frequently selected, the orange less often; and the fig, it is said, is never made use of. The nest is always carefully concealed, but when in a garden is not difficult to find, because the bird is so often seen flying to and from it. "The first nest we found," Dr. Bolle writes, "was discovered late in March 1856, in a deserted garden at Villa Orotava, and was built in a box tree about twelve feet high, which grew out of a myrtle hedge. It was in a fork of the tree, with the base of the nest only on the bough, and was large at the base, narrowing towards the top, very neatly built of snow-white plant-cotton intermixed with a few dry grass-straws. The first egg was laid on the 30th March; and one was deposited every succeeding day until five were laid, this being the normal complement; for we subsequently found three, and four in some nests, but never more than five. The eggs are pale sea-green, marked with reddish brown spots, seldom unspotted. Incubation lasts about thirteen days; and when hatched the young remain in the nest until they are fully feathered; and for some little time after they leave the nest they are fed by the parents with food disgorged from the crop. Four broods are usually raised in the season, but sometimes only three. Moulting commences late in July; and then the season of propagation has ended." The female alone attends to the duty of incubation; and whilst she is sitting the male is usually found seated on the top of some neighbouring tree uttering his rich song. By some observers the song of the wild Canary is said to be richer and sweeter than that of its caged representative; but Dr. Bolle expressly states that though the songs of the wild and the domestic bird are similar in character, that of the wild bird is the less rich of the two. Its flight resembles that of the Linnet, is wavy, and the bird flies from tree to tree at no very great altitude. When a flock is on the wing the birds do not fly in a close body, but rather scattered, and they continually utter their call-note. Except during the breeding-season, they usually collect in large flocks, splitting up into smaller bands as they go in search of food during the daytime, but collecting again in the evening to roost in company; and when they reach their roosting-place they keep up a loud confused noise for some time, until they retire to rest.

The food of the Canary consists chiefly of seeds of various kinds, tender shoots of plants, and fruit, especially figs, of which it is very fond; and Dr. Bolle remarks that he has never seen any Canaries feeding on the seeds of the thistle. Water is always a necessity to this bird; for it frequently flies off, usually in company with others, to drink, and is exceedingly fond of bathing, the wild bird making its plumage quite as wet as caged birds so frequently do.

Wild-caught birds are difficult to tame, and it is long before they become accustomed to captivity. These wild birds, however, when they have been caged some time, will pair readily with the yellow tame bird; and the mules are highly prized. Large numbers are caught and sold as cage-birds, trap cages being generally made use of for the purpose of taking them; and a tame bird is used as a decoy or call-bird. A well-wooded place in the vicinity of water is usually the best locality for the bird-catcher, and early morning is the best time to look out for them. Dr. Bolle says that in such a place he has seen sixteen to twenty captured one after the other.

The specimens figured are an adult male and female from Teneriffe, for which I am indebted to Mr. F. DuCane Godman.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Oratava, Teneriffe, April 7th, 1871 (*F. D. Godman*). *b*, ♂ *ad.* Teneriffe, April 28th, 1871 (*F. D. G.*).

E Mus. Salvin et Godman.

a, ♂, *b*, *c*, ♀. St. Michael's, Azores, April 1865 (*F. D. G.*). *d*, ♀. Madeira, 1867 (*F. D. G.*). *e*, *f*, *g*, ♂. Teneriffe, April 9th, 1871 (*F. D. G.*). *h*, ♀. Teneriffe, April 28th, 1871. *i*, ♂. Madeira, June 23rd, 1871 (*F. D. G.*).

E Mus. H. B. Tristram.

a, ♂. Canaries (*Webb & Berthelot*).



J.G.Keulemans lith.

M&N.Hanhart imp.

RED FRONTED FINCH.

SERINUS PUSILLUS

SERINUS PUSILLUS.

(RED-FRONTED FINCH.)

Passer pusillus, Pall. Zoogr. Rosso-As. ii. p. 18, tab. xliii. (1811).
Serinus pusillus (Pall.), Brandt, Phys. Math. Acad. St. Petersb. i. p. 366 (1843).
Fringilla rubrifrons, Hay, Journ. As. Soc. Beng. xv. p. 38 (1846).
Emberiza aurifrons, Blyth, Journ. As. Soc. Beng. xvi. p. 476 (1847).
Serinus aurifrons, Blyth, Cat. Mus. As. Soc. p. 125. no. 681 (1849).
Fringilla pusilla (Pall.), Gray, Gen. of B. ii. p. 372 (1849).
Pyrrhula pusilla (Pall.), Degl. Orn. Eur. i. p. 194 (1849).
Emberiza auriceps, Blyth (ubi?), fide Cab. J. f. Orn. 1854, Erinnerungsschr. p. 94.
Oraegithus pusillus (Pall.), Cab. tom. cit. p. 94, pl. 1.
Metoponia pusilla (Pall.), Bp. Cat. Parzud. p. 3 (1856).

Figuræ notabiles.

Pallas, *l. c.*; Cab. *l. c.*

♂ *ad.* fronte et pileo antico rubris: capite reliquo et gulâ nigris, nuchâ brunneo tinctâ: dorso et scapularibus nigris, plumis flavido et albo-cervino marginatis: uropygio rubro-aurantiaco: supracaudalibus dorso concoloribus: caudâ nigrâ, rectricibus centralibus flavo-albido marginatis, reliquis extùs flavo marginatis: remigibus nigricantibus, primariis extùs flavo et secundariis albido marginatis: tectricibus majoribus et medianis nigris, conspicuè albido et flavo apicatis, tectricibus minoribus aurantiacis et ad basin nigricantibus: corpore subtùs flavido, pectore et hypochondriis nigro notatis et striatis: rostro et pedibus nigris: iride fuscâ.

♀ *ad.* mari similis sed ubique coloribus sordidioribus et plagâ frontali minus extensâ.

Juv. adulto similis, sed capite brunneo nec nigro, pileo vix nigro-fusco striato, fronte inconspicuè aurantiaco notatâ: gulâ imâ et pectore nigris, plumis conspicuè flavo-albido marginatis.

Adult Male (Giaour Keuy, Taurus, 27th April). Forehead and fore part of the crown bright flame-red; rest of the head and entire throat black, the hinder portion of the crown sullied with brown; back and scapulars black, all the feathers broadly margined with buffy white or pale yellow; rump bright orange; upper tail-coverts like the back; tail black, the central rectrices margined with yellowish white, and the remainder externally edged with yellow; quills blackish, the primaries externally margined with yellow, and the secondaries with white; larger and median coverts black, broadly tipped with white and pale yellow, the lesser wing-coverts blackish on the basal part and orange on the rest of the feather, the dark bases being almost hidden; underparts below the throat pale yellow gradually fading into yellowish white towards the vent, the breast deeper yellow and marked with black; flanks striped with black; bill and legs black; iris dark brown. Total length about 4·5 inches, culmen 0·32, wing 2·82, tail 2·1, tarsus 0·85.

Adult Female (Giaour Keuy, 27th April). Resembles the male; but all the colours are much duller, and the red patch on the forehead is smaller.

Young (Kotegurh, India, 25th December). Differs from the adult female in having the entire head brown, the feathers with dark central streaks; forehead tinged with dull orange; upper parts duller and more broadly margined than in the adult female; throat and breast black, the feathers broadly margined with yellowish white; rest of the underparts as in the adult.

Obs. There appears to be but little difference between the winter plumage and that worn in the summer, except that the margins to the feathers are much broader in the winter, and gradually get abraded off towards the summer, so that by the middle or end of the summer the light margins are nearly worn away.

There are but few of our European birds about which much less is known than the present species. It is only met with in the south-eastern corner of Europe proper, but ranges eastward to Ladak. Pallas first described it from the Caucasus, but gave no details beyond that he found it common in the Caucasus and on the Caspian. Dr. Krüper informs me that examples are obtained almost every winter near Smyrna; and I am indebted to this gentleman for a specimen from there. Mr. C. G. Danford has lately brought back a fine series of specimens from the Taurus Mountains, where this Finch appears to be common; and it ranges as far south as the Lebanon, where, Canon Tristram states, a specimen was procured near Beyrout. Mr. Blanford says that he found it by no means rare in the Elburz Mountains, north of Tehran, and that it was also found in the south, but was only met with at a considerable elevation. According to Dr. Severtzoff it is resident in Turkestan, occurring at an elevation of from 4500 to 10,500 feet; and Dr. Henderson, who met with it in Ladak, writes (Lahore to Yarkand, p. 259) as follows:—"This species was met with in immense flocks, both in July and October, almost throughout Ladak, from Dras to Fota-la Pass. It was observed feeding on the flowers and seeds of an *Artemisia*. It probably breeds in May, and not impossibly in Ladak. When in flocks the sexes seem to keep apart, as out of some flocks a number of males only would be shot, while out of others nothing but females were obtained. These birds are very restless, constantly on the move, flying from bush to bush along the hill-side, and making a low, chirping noise." To this Mr. A. O. Hume adds the following note:—"Later in the autumn this bird retreats further south, and enormous numbers swarm over the lower ranges nearer the plains, at heights of from 4000 to 7000 feet. I have known of thirty being killed at one shot near Kotegurh, in the valley of the Sutlej." Dr. Jerdon (B. of India, ii. p. 411) says that it "has been found occasionally in the N.W. Himalayas, not, it appears, as a regular visitor; for Hutton says he observed this bird in 1854–55 at Mussooree after an interval of many years. It appeared to be always in pairs, and, like our Siskin and Goldfinch, is very fond of alighting upon the tall coarse nettles which abound there. It was found by Speke in Spiti and Ladak in summer; and in Afghanistan by Griffith, who observed it in flocks about cultivation, rather shy, feeding on thistles, to which they cling. Adams found it very common in Ladak, in flocks, with the habits and call-note like those of the European Redpoll." Until, comparatively speaking, quite lately next to nothing was known respecting the habits of this little Finch. Degland and Gerbe, writing in 1867, dismiss the subject with the following remark, viz.:—"mœurs, régime et propagation inconnus;" and until the above-quoted notes of Dr. Henderson were published nothing further appears to have been known beyond the scanty information furnished by Dr. Jerdon. I am therefore the more

pleased to be in a position to give some reliable details not only respecting the habits, but also as to the nidification of *Serinus pusillus*.

Mr. C. G. Danford, to whom I am indebted for so many excellent notes, met with it in the Taurus Mountains, and obtained not only many specimens of the bird, but also its nest and eggs. The following are the notes respecting the habits of this bird with which he has furnished me, viz.:—"The Kaisariyeh road diverges from the main track to Eregli, at Bozanti Khan, and, after crossing the river by a ford, leads up the northern sides of the Ala dagh through a district at first well wooded with fir (*Pinus laricio*), which soon becomes interspersed with bushes and juniper trees (*Juniperus excelsa*). The common Serin Finch had been constantly observed in other parts of the mountains, and still continued common; but it was here that the first specimen of *S. pusillus* was shot, from a small flock by the wayside. They were rather shy, and time did not admit of their being then followed up; so a long tramp from our halting-place of Giaour-keui was undertaken on the following day—quite unsuccessfully; for not one *S. pusillus* was seen.

"Next morning an excursion was made from the above village, along the banks of the Korkün river to the northward, when many flocks of the desired bird were met with, and during the rest of our stay in the Ala dagh (19th to 28th April) it was constantly observed both in little flocks and pairs at elevations of from 3000 to 5000 feet. So common was it that during a ride of eight hours from Giaour keui to Bereketlü at least a thousand of this species must have been seen.

"It appears to breed exclusively in the juniper trees, which are here very large, and form the characteristic and, cedars excepted, almost the only tree-growth of this part of the country. The dense foliage and close contact of these trees make the nests extremely difficult to find. Birds, however, were observed building; eggs almost ready for extrusion were taken from those shot; and on the 21st April a nest containing four eggs, and declared to belong without doubt to this species, was brought in. It was taken from a juniper tolerably high up; and there seems but little reason to discredit the identification, as the bird is so common and well known to the natives, whereas the ordinary Serin is quite rare among the junipers, preferring the fir-districts.

"The two species seem never to intermix at this season, though this is probably not the case in winter. In habits and song they are pretty nearly identical, the notes of *pusilla* being perhaps rather the weaker. They are, however, readily distinguishable on the wing, as the little red fronts look very dark when flying; and when feeding on the ground or perched among the dark juniper-foliage their brilliant orange-red foreheads are most conspicuous, and often look like day glowworms, being visible when the rest of the body cannot be made out.

"In a large series the colour and size of the frontal patch is the same in both sexes; but the male differs from the female in having the black of the throat deeper and extended lower down, and the general plumage more richly tinted with orange. These juniper-districts of the Ala dagh are the only localities in which the present species was found to occur, and are evidently the breeding-grounds of vast numbers of this beautiful little Finch."

Mr. Danford has forwarded to me for inspection the nest and eggs of this bird above referred to. The nest is a rather larger structure than that of the common Serin Finch, is built of fine bents intermixed with a few grey lichens, and is carefully and warmly lined with dark-coloured

soft feathers. In general appearance the nest differs considerably from that of the Serin Finch; but the eggs very closely resemble those of that bird, but are, as a rule, a little darker in shade of ground-colour.

The specimens figured are an adult male from the Taurus, shot by Mr. Danford, and a young bird from Kotegurh, both of which are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *juv.* Near Smyrna, December 27th, 1871 (*Dr. Krüper*). *b*, ♂, *c*, ♀. Giaour Keui, Taurus Mountains, April 19th and 24th, 1876 (*C. G. Danford*). *d*, ♂. Caucasus (*Dr. Radde*). *e*, ♂. Alatau, Turkestan (*Brandt*). *f*, *g*, ♂, *h*, ♀. Tatulee, Kotekhaie, India, February 28th, 1871 (*Dr. Henderson*). *i*, *k*, ♀. Kotegurh, December 25th, 1870 (*Dr. Henderson*).

Genus LIGURINUS.

Passer apud Brisson, Orn. iii. p. 190 (1760).
Loxia apud Linnæus, Syst. Nat. i. p. 304 (1766).
Chloris apud Cuvier, Leç. d'Anat. Comp. tab. ii. (1800).
Fringilla apud Meyer, Vög. Liv- u. Esthl. p. 76 (1815).
Ligurinus, Koch, Baier. Zool. i. p. 230 (1816).
Serinus apud Boie, Isis, 1822, p. 555.
Coccothraustes apud Stephens, in Shaw's Gen. Zool. xiv. p. 87 (1826).
Chlorospiza apud Bonaparte, Comp. List, p. 30 (1838).

The Greenfinch and its allies have very generally been separated, and, it appears to me, with good reason; for although they are on the one side closely allied to the Grosbeaks, and on the other to the Sparrows, they form a very fairly separable group.

This genus is represented in the Palæarctic and Ethiopian Regions, one species only being found in the Western Palæarctic Region. The Greenfinches frequent woods, groves, and gardens, usually in the lowlands, and are residents, collecting together in flocks in the autumn and wandering about in the fields in search of food. They feed on insects, seeds, fruits, &c., chiefly on seeds, except in the spring and early summer, and construct a tolerably well-made cup-shaped nest of fibrous roots, twigs, dry bents, moss, hair, &c., which they place on a tree or in a bush, and deposit several bluish-white eggs marked with purplish grey, blackish brown, and reddish brown. They have a very poor song; and their call-note is peculiarly harsh and screechy.

Ligurinus chloris, the type of the genus, has the bill rather short, straight, conical, nearly as broad as high at the base, compressed towards the tip, acute, with a scarcely perceptible notch at the point; nostrils basal, concealed by stiff feathers directed forwards; wings moderately long, rather pointed, the first quill obsolete, the second, third, and fourth nearly equal, the third, if any thing, the longest; tail rather short, emarginate; legs rather short, the tarsus covered in front with four large and three inferior scutellæ; toes moderate, claws arched, acute, laterally grooved.



GREENFINCH.
LIGURINUS CHLORIS.

LIGURINUS CHLORIS.

(GREENFINCH.)

Passer chloris, Briss. Orn. iii. p. 190 (1760).
Loxia chloris, Linn. Syst. Nat. i. p. 304 (1766).
Le Verdier, Buff. Hist. Nat. Ois. iv. p. 172 (1778).
Fringilla chloris (L.), Meyer, Vög. Liv- & Esthl. p. 76 (1815).
Ligurinus chloris (L.), Koch, Baier. Zool. i. p. 230 (1816).
Serinus chloris (L.), Boie, Isis, 1822, p. 555.
Ligurinus chloroticus, Licht. Nomencl. Av. p. 46 (1823).
Coccothraustes chloris (L.), Steph. in Shaw's Gen. Zool. xiv. p. 87 (1826).
Chloris pinetorum, C. L. Brehm, Vög. Deutschl. p. 259 (1831).
Chloris hortensis, C. L. Brehm, op. cit. p. 260 (1831).
Chloris septentrionalis, C. L. Brehm, op. cit. p. 261 (1831).
Chloris flavigaster, Swains. Classif. of Birds, ii. p. 281 (1837).
Chlorospiza chloris (L.), Bp. Comp. List, p. 30 (1838).
Chlorospiza chlorotica (Licht.), Consp. Gen. Av. p. 514 (1850).
Ligurinus aurantiiventris, Cab. Mus. Hein. i. p. 158 (1851).
Chloris aurantiiventris (Cab.), Salvin, Ibis, 1859, p. 313.

Glaiseun-darach, Gaelic; *Verdier ordinaire*, French; *Verdilhão*, Portuguese; *Verdon*, Spanish; *Verdone*, Italian; *Verdun*, Maltese; *Grünling*, *Grünfink*, *Grünhänfling*, German; *Groenling*, Dutch; *Grönirisk*, Danish; *Svenske*, Norwegian; *Grönfink*, Swedish; *Vihertävä Varpunen*, Finnish.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 267. fig. 2; Werner, Atlas, *Granivores*, pl. 36; Kjærb. Orn. Dan. taf. xxvi.; Fritsch, Vög. Eur. taf. 17. fig. 12; Naumann, Vög. Deutschl. taf. 120. figs. 1, 3; Sundevall, Svensk. Fogl. pl. v. figs. 3, 4; Gould, B. of Eur. pl. 200; id. B. of G. Brit. iii. pl. 39; Schlegel, Vog. Nederl. pl. 164.

♂ *ad.* suprà cinereus viridi-flavo notatus: fronte et pilei lateribus flavis: remigibus nigro-fuscis, primariis extùs ad basin flavo marginatis, secundariis et tectricibus alarum conspicuè schistaceo-cinereo marginatis, tectricibus minoribus viridi-flavo marginatis, margine alarum lætè flavo: uropygio et rectricibus in parte basali (centralibus exceptis) flavis: rectricibus centralibus, et reliquis in parte apicali, nigro-fuscis, cinereo marginatis: loris nigricantibus: mento, gutture et pectore viridi-flavis: pectore imo et abdomine summo flavis, hypochondriis et abdomine imo cinereis: subcaudalibus albis flavido lavatis: rostro brunnescenti-corneo vix rufescente tincto, ad apicem saturatiore et ad basin mandibulæ pallidiore: pedibus brunneis: iride fuscâ.

♀ *ad.* sordidior, corpore suprà brunnescentiore: capite haud flavo notato: plumis in corpore suprà centraliter

fusco notatis: alis minus flavidè et uropygio magis viridè quam in mare coloratis: mento cinereo-albo: corpore subtùs grisescenti-cinereo, abdomine centrali et subcaudalibus albidis: pectore flavido notato.

Adult Male (near London, 20th May). Crown, nape, and back ashy grey, marked here and there with apple-green; forehead, space above the eyes, and rump golden yellow with a greenish tinge; quills blackish brown, the primaries with the basal portion of the outer web broadly margined with bright yellow, the secondaries and coverts broadly margined and slightly tipped with slaty grey, the lesser coverts marked with apple-green; the edge of the wing rich golden yellow; central rectrices and the terminal half of the remaining tail-feathers blackish brown with slate-grey margins, the basal half being yellow; sides of the head and neck ashy grey marked with apple-green; lores blackish; feathers at the base of the bill, chin, and throat apple-green, brightening on the lower breast and upper abdomen to bright yellow, flanks and lower abdomen slaty grey; under tail-coverts white, washed with yellow; bill pale reddish brown, darker at the point and lighter at the base of the lower mandible; legs wood-brown with a fleshy tinge; iris hazel. Total length about 6 inches, culmen 0·5, wing 3·55, tail 2·5, tarsus 0·7.

Adult Female (Piedmont, May). Much less brightly coloured than the male, the upper parts brownish ash, the feathers with darker centres; no yellow on the head, the back but slightly tinged with yellowish green, and the rump greener than in the male; the yellow on the wings duller than in the male; chin, throat, breast, and flanks dull ashy grey, lightest on the chin; breast and lower throat tinged with yellow; lower abdomen and under tail-coverts dull white.

Male in autumn plumage.. The fresh-moulted feathers have grey or brownish grey edgings, which hide the bright tints of the plumage and make it look duller; on the upper part these edgings are brownish, on the throat and neck greyish or bluish grey, and on the rest of the underparts greyish white.

Obs. As a rule specimens from the south of Europe and North Africa are somewhat richer-coloured and a trifle smaller in size than those from the north; but in a series this difference is at once seen to be by no means constant; for I have in my own collection males quite as richly coloured as any I have seen from the south of Europe or North Africa, and one sees now and then examples from the south of Europe quite dull-coloured. In size they also vary greatly; and in the series from Spain, lent to me by Mr. Howard Saunders, I find males as large as the one above described, and others measuring—culmen 0·5, wing 3·1, tail 2·2, tarsus 0·7. On the other hand I find several British specimens smaller than the bird described, which I picked out as being a very fine bright-coloured bird.

The Greenfinch, or Green Linnet as it is frequently called, is found throughout Europe, except in the extreme north, and ranges as far east as the Tálish mountains.

It is not known to have occurred in North-east Africa, but is common on the west side of North Africa.

In Great Britain it is very common and resident throughout the country, being found in every county of England. Mr. Cecil Smith informs me that it is also as common on the Channel Islands as it is on the mainland. In Scotland it is resident, and occurs, Mr. R. Gray says, on North Uist and Harris, and probably the whole of the Long Island. It is a winter visitant to the Orkneys; and Dr. Saxby states that though until very recently rare in the Shetland Islands, it has within the last few years become a regular winter visitant. In Ireland, Thompson writes, it is common, and resident in suitable localities throughout the island. It does not appear ever to have been captured in Greenland or Iceland, but has occurred in the Færoes, where one was

found dead close to the shore of Hoidenor, in December 1865; a second was also found dead near Thorshavn in April 1869; and, according to Captain Feilden, one was shot near Eide on the 16th January, 1871, and many others seen in several places. Mr. Robert Collett informs me that in Norway "it breeds from Lindesnæs and the Hvalöerne up to Nordland, where in July 1875 he met with it on the frontiers of Helgeland. It prefers the coast to the interior, and is common in most localities where there is low conifer-growth, or in gardens where there are broad-leaved trees. On the fells it never appears to pass the conifer-region. Most migrate southward at the approach of winter; but in some seasons large flocks pass the winter in the southern lowlands. Those which leave the country return late in March." In Sweden it is, Professor Sundevall says, "common in the southern and central districts, in Dalecarlia and Helsingland, but not in Lappmark."

It is spread almost all over Finland, but is everywhere rather rare than otherwise. Von Wright thinks that possibly some may remain over winter. It is found in North Russia. Mr. Meves observed it at Dubno, near the Ladoga canal; and Mr. Sabanäeff informs me that it is very generally distributed throughout Russia in Europe, and sometimes winters in Central Russia. He met with it in the Ural, where it was rare on the eastern slopes, and is found tolerably far north in the Perm Government. Falk says that it is met with as far as the Ob river; and Eversmann states that it is common in the northern portion of the Orenburg Government. In Germany it is, Borggreve says, a regular summer visitant in the eastern portions, and a partial summer migrant in the west, where, however, it is commoner than in the east. In Denmark it is common at all seasons; and in Holland it is also numerous, as also in France and Portugal, where it breeds and remains throughout the winter. Colonel Irby and other authors on Spanish ornithology speak of it as being very numerous in Spain in the summer as well as in the winter; and I observed it when at Barcelona in May, but did not find it so common as might have been expected. Throughout the whole of Southern Europe, in Savoy, Italy, Southern Germany, Greece, &c. it is common and generally distributed. In Italy large numbers pass to winter in the south, and in Sicily, where, according to Doderlein, comparatively few remain to breed. Mr. C. A. Wright says that it is common at Malta in winter; and Mr. A. B. Brooke speaks of it as being numerous in Sardinia at all seasons. In Greece it is also found both in summer and winter; many arriving from the north in the autumn to winter, and leaving again in the spring. According to Professor von Nordmann it very rarely remains in Southern Russia over the summer; and he only once saw it in the Crimea at that season, though it is common at the two seasons of passage. It is found and breeds in Asia Minor, and likewise occurs in Palestine, where, Canon Tristram says (Ibis, 1868, p. 206), it "is a very common winter visitant on the coasts, and abounds especially on Mount Carmel, and on any wooded hills, but is rare in the interior, and disappears in spring."

So far as I can ascertain, it has not been known to occur in North-east Africa, but is resident and by no means uncommon in the western side. Loche speaks of it as being numerous in Algeria; Mr. Taczanowsky found it common all over the Tell; and Mr. Salvin met with it breeding near Djendeli. The North-African Greenfinch has by some authors been considered specifically distinct from our bird; but after a careful comparison I fail to find any constant difference, though many specimens from Southern Spain and North Africa are somewhat

brighter-coloured and perhaps a trifle smaller than the average of the North-European examples. Mr. J. H. Gurney, jun., also takes this view, and writes (Ibis, 1871, p. 293) as follows:—"I think that, though the extremes of *C. chloris* and *C. aurantiiventris* may be widely different, they run into each other so much, that it is impossible to draw the line, and that the latter name will have to sink into a synonym. At Miliana, where they were plentiful and quite tame (often entering within the walls of the town), there were always some dull-coloured individuals in a flock, far duller than many British ones which I have seen." Colonel Irby, who says that, according to Favier, it is a common resident near Tangier, but many migrate in immense flocks which pass north in February and March, returning in October and November, adds that he never could see sufficient reason for a separation of the North-African from the European bird.

To the eastward the Greenfinch is found as far as the Tálish Mountains, where Ménétries met with it; but Mr. Blanford informs me that he does not believe that it occurs in Persia.

The present species is not a frequenter of the dense forest, but is usually met with in cultivated places, gardens, groves, and the outskirts of the larger forests, and more especially places where water is in the vicinity. It is a tolerably shy bird, and knows quite well how to keep out of the way of danger, although when unmolested it becomes tame and fearless. Like most of its allies it feeds chiefly, if not entirely, on seeds of various kinds, and is not unfrequently very destructive to gardens, especially where hemp and spinach have been sown; but most kinds of seeds, both wild and cultivated, are devoured by this. Mr. R. Collett informs me that in Norway he has frequently seen Greenfinches eating the seeds of *Ulmus montana*, and that they are caught in snares baited with the berries of the mountain-ash. It either picks the seeds up from the ground or else from the plants as they are still hanging; but on the ground it is rather a clumsy bird than otherwise, but hops with tolerable ease. Though a heavy bird, it flies swiftly, its flight reminding one of that of the Sparrow. So soon as the summer is over the Greenfinches collect in flocks, and remain thus until the following spring, wandering about in search of food. The song of the male is neither pleasing nor rich; and I should never select the present species as a cage-bird, at least not on account of its song. Its call-note is a loud, extremely harsh, and prolonged note, which somewhat resembles the syllable *schäär*, but is difficult to reproduce; and this is often uttered as the male sits on the top of a tree, and is used as a prelude to its rather simple song. When singing it spreads and closes its tail and jerks the hinder part of its body; sometimes it soars or flies from the summit of one tree to another singing the whole time.

It commences nidification in April, the eggs being deposited in May; and not unfrequently a second brood is raised in the same season. The nest is constructed of grass-bents, roots, &c. intermixed with moss and wool, the internal portion being composed of rather finer materials; and the inside lining is usually composed of hair: as a rule it is a neat and well-finished structure, though some nests are much less artistically formed and finished than others. Usually the nest is placed in a bush, a hedge, or a fruit-tree, not above eight or ten feet above the ground, but occasionally higher. Naumann says that it seldom nests in fruit-trees, but frequently in pollard willows and poplars; and Mr. Collett informs me that in Norway it nests in juniper bushes, fruit-trees, or in low conifers, especially *Pinus sylvestris*. Occasionally its nest

is placed in a somewhat peculiar situation; for Herr A. von Homeyer says (J. f. O. 1868, p. 285) that he caught a female near Frauenstadt on her nest, which was built in a hole of a willow tree about five inches deep. A curious instance of a double nest being built is recorded by Mr. Gurney, who writes (Zool. 1852, p. 3577) as follows:—"During the spring of this year, in a thick bushy plant of an ornamental heath, growing in a garden a few miles distant from Norwich, were found two nests of the common Greenfinch, which not only were completely interwoven at the adjoining sides, but were built on one common platform, a foundation of fibrous roots and moss. Both nests were complete, except that one of them was deficient in interior lining. When found, I understand, there was one egg in each nest; but it was not ascertained whether the nests belonged to two pairs of birds or only to one pair."

The eggs of this species, from four to six in number, are white with a faint sea-green tinge, sparingly marked with pale purplish red shell-blotches and very deep-red surface-spots, the larger end being, as a rule, much more spotted and blotched than the rest of the surface of the egg. In size those in my collection vary from $\frac{30}{40}$ by $\frac{24}{40}$ inch to $\frac{34}{40}$ by $\frac{24}{40}$ inch.

The specimens figured are the adult male and female above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, *b*, ♂, *c*, ♀. Near London, May 20th, 1870 (*Davy*). *d*, ♂. Cookham, Berks, January 5th, 1871 (*R. B. Sharpe*). *e*, ♂. Palsgaard, Denmark, May (*A. Benzon*). *f*, ♂. Seville, February 27th, 1870 (*H. Saunders*). *g*, ♀. Rio Genil, Granada, Spain, May 1870 (*H. Saunders*). *h*, ♂. Piedmont, April 1870. *i*, *k*, *l*, ♂, *m*, ♀. Piedmont, May 1870 (*Count Salvadori*).

E Mus. Howard Saunders.

a, *b*, ♂. Seville, Spain, February 1870. *c*, ♂, *d* ♀. Seville, March 1870. *d*, ♂. Granada, June 4th, 1870. *e*, ♂. Sierra Nevada, March 1871. *f*, ♂. Granada, May 1871. *g*, ♂. Valencia, Spain, April 6th, 1873. *h*, ♀. Valencia, May 2nd, 1873 (*H. S.*).

E Mus. C. A. Wright.

a, ♀. Malta, November 1862 (*C. A. W.*).

E Mus. G. E. Shelley.

a, ♂. Tangier, March 15th, 1873 (*G. E. S.*).

E Mus. J. H. Gurney, jun.

a, ♂. Blida, Algeria, February 14th, 1870 (*J. H. G.*).

Genus COCCOTHRAUSTES.

Coccothraustes, Brisson, Orn. iii. p. 219 (1760).
Loxia apud Linnæus, Syst. Nat. i. p. 299 (1766).
Fringilla apud Meyer, Vög. Livl. p. 73 (1815).

The Hawfinch differs quite sufficiently in general form from its allies to justify its being placed in a separate genus. Some authors have united this genus with *Ligurinus*; but this appears to me scarcely justifiable. Only one species is usually referred to the present genus, its range being given in the following article, as also full particulars respecting its habits and nidification. This species, *Coccothraustes vulgaris*, has the bill rather long, straight, conical, very stout and large, higher than broad at the base, acute, there being a very slight notch close to the tip; nostrils small, elliptical, basal, concealed by reflected feathers; wings broad, moderately long, the three outer quills nearly equal, the second longest, the secondaries curved outwards like a billhook; tail short, slightly emarginate; legs short, stout, the tarsus covered in front with four larger and three inferior scutellæ; toes slender, compressed, claws tolerably long, arched, acute, laterally grooved.



HAWFINCH.
COCCOTHRAUSTES VULGARIS.

COCCOTHRAUSTES VULGARIS.

(HAWFINCH.)

Coccothraustes, Briss. Orn. iii. p. 219 (1760).
Loxia coccothraustes, Linn. Syst. Nat. i. p. 299 (1766).
Le Gros-bec, Buff. Hist. Nat. Ois. iii. p. 444 (1775).
Coccothraustes vulgaris, Pall. Zoogr. Rosso-As. ii. p. 12 (1811).
Fringilla coccothraustes (L.), Meyer, Vög. Livl. p. 73 (1815).
Coccothraustes deformis, Koch, Baier. Zool. i. p. 226 (1816).
Fringilla coccothraustes alba, J. F. Naumann, Vög. Deutschl. iv. p. 441 (1824)
Fringilla coccothraustes fulva, J. F. Naumann, ut suprà (1824).
Coccothraustes fagorum, C. L. Brehm, Vög. Deutschl. p. 256 (1831).
Coccothraustes cerasorum, C. L. Brehm, op. cit. p. 257 (1831).
Coccothraustes planiceps, C. L. Brehm, op. cit. p. 258 (1831).
"*Coccothraustes europæus*, Selby," Swains. Classif. of B. ii. p. 277 (1837).
Coccothraustes atrigularis, Macgill. Hist. Brit. B. i. p. 356 (1837).
Coccothraustes flaviceps, Brehm (ubi?), fide Bp. Consp. Gen. Av. i. p. 506 (1850).
Coccothraustes vulgaris japonicus, Temm. & Schlegel, Fauna Japonica, p. 90 (1850).
Coccothraustes minor, C. L. Brehm, Vogelfang, p. 94 (1855).

Hawfinch, *Grosbeak*, English; *Gros-bec*, French; *Cascanueces*, Spanish; *Frusone*, Italian; *Ghasfur-ta-Zebbug*, Maltese; *Kirschbeisser*, *Kernbeisser*, *Kirschknacker*, German; *Appelvink*, Dutch; *Kjernebider*, *Kirsebærfugl*, Danish; *Kirsebærfugl*, Norwegian; *Stenknäck*, Swedish; *Nokkavarpunen*, Finnish; *Dubonos*, Russian.

Figuræ notabiles.

Edwards, Gleanings, pl. 188; D'Aubenton, Pl. Enl. 99, 100; Werner, Atlas, *Granivores*, pl. 35; Frisch, Vög. Deutschl. taf. 4; Fritsch, Vög. Eur. taf. 27. fig. 8; Naumann, Vög. Deutschl. taf. 114; Sundevall, Svensk. Fogl. pl. v. figs. 5, 6; Gould, B. of Eur. pl. 199; id. B. of G. Brit. iii. pl. 40; Schlegel, Vog. Nederl. pl. 172; Temm. & Schl. Fauna Japon. pl. 51.

♂ *ad.* capite summo flavicanti-cervino, versus nucham flavicanti-brunneo, capitis lateribus ochrascenti-cervinis vix brunneo tinctis: lineâ circa basin rostri, loris et gulâ velutino-nigris: collo postico cinereo: dorso cum scapularibus brunnescenti-castaneis: uropygio brunnescenti-cervino: remigibus nigris, in pogonio interno maculâ magnâ albâ notatis: primariis intimis et secundariis purpureo nitentibus, illis apicibus rhombeo-truncatis, secundariis intimis brunnescentibus: tectricibus primariorum nigris: tectricibus majoribus albis, intimis cervinis: tectricibus minoribus castaneo-fulvis: rectricibus centralibus griseo-brunneis albo apicatis, reliquis nigricantibus in pogonio interno versus apicem albis: corpore subtùs grisescenter incarnatè cervino, abdomine centrali et subcaudalibus albis: rostro cærulescenti-livido: iride griseâ: pedibus incarnatis.

♀ *ad.* mari similis sed sordidior et secundariis (intimis exceptis) in pogonio externo cærulescenti-cinereis nec nigris, tectricibus alarum majoribus brunneo tinctis et maculâ gulari minus extensâ.

Adult Male (Spain, May). Forehead yellowish fawn-colour, gradually becoming yellowish brown on the hind crown; sides of the head pale sandy ochre, with a brownish tinge; a narrow line round the base of the bill, lores, and a large patch covering the chin and upper throat velvety black; hind neck ashy grey, this colour forming a collar, which extends to the sides of the neck; back and scapulars dark chestnut-brown, rump fawn-brown, quills bluish black, with a large patch of white on the inner web, the inner primaries and secondaries glossed with purple; the fifth and succeeding primaries peculiarly widened and hooked at the tip; secondaries square at the tip; innermost secondaries brownish fawn; primary coverts blackish; larger coverts white, except the innermost ones, which are fawn-colour; lesser coverts chestnut-brown; central rectrices greyish brown, tipped with white, the remaining tail-feathers blackish, with the terminal half of the inner web white; underparts pale greyish brown, with a rosy fawn-coloured tinge; centre of abdomen and under tail-coverts white; bill bluish; iris greyish; feet flesh-colour. Total length about 7 inches, culmen 0·85, wing 3·9, tail 2·5, tarsus 0·9.

Adult Female (Hampstead, Middlesex, 20th April). Is duller in colour than the male; the black on the throat is less extensive; the white on the wing-coverts is tinged with greyish brown, and the outer webs of all but the innermost secondaries are ashy blue-grey.

Young Male (Hampstead, June). Crown, nape, and sides of the head yellowish brown; upper parts dull yellowish chestnut-brown, the grey collar being absent; wings and tail as in the adult, but the white wing-coverts are intermixed with black; lores blackish brown; throat yellow, gradually becoming pale yellowish brown on the breast; flanks dull buffy white, rest of the underparts dull white; lower breast and flanks distinctly spotted and barred with dark brown; bill dull flesh; iris brownish grey; legs dirty brownish flesh.

Young Female. Resembles the young male, but may be distinguished by being duller and having the outer webs of the secondaries blue-grey.

Nestling (Staufen, Baden, June 10). A young bird taken out of the nest and sketched by me at once, is bare of feathers, except that on the head it has a large crest-like bunch of white down, and a similar bunch on the back. In colour it is pale flesh, the beak being, however, yellowish, except round the nostrils, where it has a greenish tinge. This bird could not have been more than a day or two old; but on revisiting the nest nine days afterwards I found the remaining young nearly feathered, and two flew out directly I touched the nest, and tried to hide in the grass and weeds. They nearly resembled the young bird above described, but had the tail very short, and remains of down in the plumage.

Obs. On comparing a series of specimens from various localities I find that those from Northern Europe are duller in colour than others from the southern countries; and our British bird is perhaps the dullest of all, though now and then one sees a specimen nearly as richly coloured as any from the south of Europe. The Japanese Hawfinch has been considered by Temminck and Schlegel to be fairly distinguishable from our European bird; but they must have compared specimens from Japan only with exceedingly dull North-European examples; for on comparing those in the collection of Mr. Swinhoe, from China and Japan, with specimens from Spain and Italy, I can trace no difference either in tinge of colour or in any way whatever. In the winter dress the Hawfinch differs in having the beak dull flesh-coloured, and the colours of the plumage are duller and browner, the head has lost the bright yellowish fawn tinge and is browner, and the underparts have become greyer, the rosy fawn tinge having disappeared.

In Europe the Hawfinch inhabits the central and southern districts, becoming rarer towards the north, and not extending its range into the north of Scandinavia. To the eastward it is met with as far as Japan; and to the south it is met with as far as Northern Africa, where, however, it is rare. In Great Britain it is a resident, and is much more numerous than it used formerly to be. I can recollect when it was considered to be a rare bird in parts of Kent, where it now breeds regularly, and would be numerous were it not that the owners of orchards destroy it whenever they get the chance of so doing. It breeds commonly in many parts of Southern England; and Mr. A. G. More writes that it nests regularly in Wilts, Kent, Surrey, Essex, Middlesex, and Bucks, and that its nest has also been found in Dorset, Hants, Sussex, Herts, Berks, Oxford, Suffolk, Norfolk, Warwick, Rutland, and Derby. Mr. Cecil Smith informs me that it is "a regular but not very numerous winter visitant in Somerset; and some must remain to breed in various parts of the county, as on the 27th of June, 1872, a friend who lives about four miles off, at Fitzhead, sent me a young bird which could only have left the nest a short time; this bird had been picked up nearly dead in his stable-yard, where it was caught by the cat. I still have the skin. There is also in the Museum at Bath a Hawfinch about the same age, said to have been killed near there." Towards the north of England it becomes rarer, and appears chiefly to occur during the winter. Mr. Cordeaux (B. of Humber Distr. p. 53) speaks of it as being an occasional but uncertain winter visitant in Yorkshire, but adds that during the last ten years it has become commoner. In Scotland it is rare. Mr. Robert Gray records the capture of a specimen near Newton Stewart, in Wigtownshire, in January 1871, and says that it has been traced from Dumfriesshire to East Lothian, thence to Aberdeenshire, Banffshire, and Caithness, in all of which counties several specimens have been obtained. Thompson states that it occasionally visits Ireland during the winter; and he gives many instances of its occurrence; but it does not appear to have ever been met with breeding in that country. In Scandinavia it occurs only in the southern portions of the country, and becomes very rare further north. Mr. Robert Collett informs me that it is now and then seen in the southern portions of Norway, but can scarcely be considered an annual visitant. It has frequently, he says, been seen near Christiania in the winter and spring, but has most frequently appeared at Nedenæs, in Christiansand stift. It has twice been obtained at Fredrikshald. In Sweden it is also met with; Nilsson says that he has only seen it in Halland and Skåne, but that it had also occurred, though rarely, near Stockholm; and Professor Sundevall, whose work is of recent date, states that it "occurs sparingly here and there in the southern half of Sweden, from Skåne to Wermland, Dalarne, and Vestmanland, and possibly occurs further north, as Zetterstedt speaks of it as having been observed in the Åsele district. Von Wright says that it has only twice or three times occurred in Finland, once in December and once in May, and one was also observed in June near Helsingfors by Professor Nordmann. In Russia it is, Mr. Sabanäeff informs me, rare in the north, and has not been observed above the district of Rostoff. Near Moscow it is only seen during passage, but has been met with in the Government of Smolensk during the breeding-season. It has been seen near Novaja Ladoga, and is very rare in the Governments of Kazan and Simbirsk. In the Ural it does not range far north, but is met with rarely in the southern portions of the Government of Perm on the eastern slope. Martin observed it near the Sesertsk hills; and Sabanäeff himself believes it to be common on the western slope in the Niazepetroffsk Ural.

Meyer says that it is rare in Livonia; and in North Germany it is, Borggreve writes, a partial migrant, being most numerous in the non-evergreen woods in the western portion of that country. Dr. Rey says that whereas it used formerly to breed near Halle, in Saxony, it now only occurs there during passage, when it is not uncommon. Mr. Benzon informs me that it is met with in all the Danish provinces, but most frequently on passage, and though it breeds on the islands it cannot be looked on as anything but a rare summer resident. In Western Germany I have frequently met with it, especially in the countries bordering the Rhine. Mr. Sachse informs me that at Altenkirchen, in Rhenish Prussia, it is not common, but remains to breed, arriving in March and leaving in October or November; but some remain over winter, these being almost all males, and at that season are found in the beech-woods. I found a nest close to the Rhine, near Staufen, in Baden, in June this year, and took a young bird out to sketch it from life. I was told that it breeds there not unfrequently, but is always found in the plains. In Belgium it occurs during passage, and also breeds in the Ardennes and other wooded districts; and in Holland, Mr. Labouchere informs me, it "is by no means common; it is, however, known to breed in the province of Guelderland; and in autumn it is an occasional visitor of the other provinces." In France it is, Messrs. Degland and Gerbe say, resident throughout the country; and Professor Barboza du Bocage states that it is common in Portugal. In Spain, Colonel Irby writes (Orn. of Str. Gibr. p. 124), "it is very common, and most plentiful in winter. Some nest in the cork-wood (near Gibraltar) in May;" and Mr. Saunders states that it is common on the coast in winter, but retires to the higher ground to breed. Passing eastward, again, I find it recorded by Bailly as resident in Savoy; but he adds that some migrate during the winter; and in Italy, Salvadori states, it is generally distributed, some breeding in the northern provinces, but retiring to the south for the winter, when many are also found in Sicily and Sardinia; but Mr. A. B. Brooke writes (Ibis, 1873, p. 247) that he "did not see any [in Sardinia] before the 9th of April, when they began to appear in considerable numbers; and during the summer they were common in all the orchards, where they bred." Mr. C. A. Wright has met with it in Malta in November and December, and says that in some years it is common, but rare in others; and Lord Lilford writes (Ibis, 1860, p. 137), "I found it common in winter in the thorn-coverts of Epirus. I have observed old nests in that country, which I am pretty sure belonged to this bird, though I never saw it or heard of its occurrence there during the summer months." In Greece it is, according to Dr. Krüper, a resident, but commoner during the winter than in the summer. He found it breeding in Ætolia, near the lakes of Vrachori, as also at Taygetos, in the Southern Peloponnesus. In Southern Germany it is also resident; but Dr. A. Fritsch says it is not common in Bohemia. Seidensacher informed me that it bred here and there near Cilli, in Styria; it occurs in the countries skirting the Danube; and Dr. Finsch speaks of it as being not uncommon in Bulgaria.

In Southern Russia it is common; and Mr. Goebel says that it breeds not unfrequently in the Uman district, and some winter there; but the latter are, he believes, birds which arrive from the north, as he did not observe them until some time after those which had bred there had left.

Dr. Krüper informs me that it is resident in Asia Minor; and Canon Tristram met with it in Palestine, but only once, near Gilead. In North-east Africa it is extremely rare; for

Captain Shelley only includes it on the strength of one specimen received from near Alexandria in 1859 by Dr. Cavafy; but it is said to be resident in North-west Africa. Loche speaks of it as occurring in all three provinces of Algeria; Mr. Taczanowski met with it in the province of Constantine; and Mr. O. Salvin observed a pair in May in the tamarisk trees near the spring of Aïn Djendeli. Mr. C. F. Tyrwhitt-Drake saw one which had been shot at Tetuan; and Colonel Irby says (*l. c.*) that, according to Favier, it is very rare near Tangier, he only having met with two, one in 1836 and the other in 1849.

To the eastward it occurs, as above stated, as far as Japan. De Filippi observed it in Ghilán, between Kasvin and Resht; but Messrs. Blanford and St. John did not meet with it in Persia. It does not occur in India, but is found throughout Siberia, except in the northern portion. Von Middendorff observed it at Irkutsk in March; and both Dr. Radde and Von Schrenck obtained it on the Amoor; the latter observed it at the Nikolaieffsk Post in October, and near the mouth of the Ussuri in September. Mr. Maximowicz met with it at Dshaï on the 3rd (15th) of May; and Dr. Radde obtained specimens at the Tarei-nor in May and in September. Dr. Dybowski says that it is rare in Eastern Siberia during the summer; but he does not appear to have found its nest. In Mongolia it occurs, Père David says, in considerable numbers during the two seasons of passage; and Mr. Swinhoe speaks of it as being found in China from Shanghai to Pekin, and westwards to the Ichang gorge. Messrs. Temminck and Schlegel obtained it from Japan, but give no information as to its range there.

Though heavily and somewhat clumsily built, the Hawfinch is by no means either stupid or slow in its movements, but is one of the most wary and shy of our birds. It avoids the presence of man, and will either hide in the dense foliage should any one approach, or else take flight; and as it usually selects the top of a tree for its perch, it cannot well be approached without seeing the intruder. Its short legs make its progress on the ground rather heavy; and it is, comparatively speaking, seldom seen there; but amongst the branches it hops about with ease, if not with elegance, and before taking flight will hop quickly from twig to twig until it reaches the top of the tree and call its comrades. It may frequently be seen sitting on the summit of a tree in a very erect position, especially the male bird, in the spring of the year, when it utters its call-note or song. Its call-note is a prolonged *zee*, sharply and clearly uttered, either when on the wing or immediately before taking flight; for when sitting, and especially when feeding, it is a very silent bird; and this note is uttered quickly several times in succession when used as an alarm-note. Its song, if such it can be called, is neither melodious nor pleasant, and is merely a repetition and endless variation of its usual call-note and its other usual note, a sharp call resembling the word *knipps*, uttered with modulations. It commences to sing early in the year; and as soon as the young are hatched its song is no longer heard.

Its flight, though laboured and effected by a very rapid motion of the wings, is swift and direct; and it appears able to traverse long distances on the wing.

It feeds chiefly on the kernels of hard-shelled seeds or fruits, such as the kernel of the cherry-stone, of which it is especially fond, beech-nuts, hawthorn-berries, sloes, and will often feed on the seeds of conifers, and visit the gardens in search of seeds of various kinds. During the cherry-season it will, unless checked, do much damage amongst the cherry-trees, and a few birds will soon clear off a considerable number of cherries. The fleshy part is cast aside and the

stone broken only so as to get at the kernel; and therefore it appears to prefer those with but little of the fleshy part, but especially such as have a large and well-filled stone, and the wild cherry is a favourite fruit with this bird. After the cherry-season it will frequently visit the gardens, and has rather a liking for peas. During the winter it feeds chiefly on the seeds of the beech and hornbeam (*Carpinus betulus*) when these are to be had, and in the spring will not unfrequently eat buds. It is also said to feed on insects of various kinds during the spring and summer; and that the young are, when newly hatched, fed on these I know from experience; for I have found large green caterpillars in the stomach of young taken from the nest.

For the purposes of nidification the Hawfinch chooses some greenwood grove, an orchard, or even places where small knolls of trees are scattered about here and there; but so far as I know or can ascertain, it never resorts to conifer growth for the purposes of nidification. With us in England it usually breeds in fruit-trees in the orchards, or else in woods which are composed entirely of non-evergreen trees, and then usually places its nest in a high thorn, a hornbeam, or a holly; on the Continent I have seen the nests in oak-groves, both in young growth and in tolerably large trees. I examined a nest which contained young early in June of the present year. It was in a tolerably large oak in a grove not far from Staufen, in Breisgau, and was placed in the main fork about 35 or 40 feet above the ground. From below it looked like a small Jay's nest, being tolerably large, and had the base composed of small sticks or large dry twigs; but though flatly built, the interior was neatly rounded out and lined. It was constructed of twigs, roots, and dried plants, and lined with fine roots and a few hairs. Sometimes the nest is but slightly built, and at others it is a carefully built and stout structure. The eggs, from three to five or six (usually, however, four to five) in number, are in shape and size similar to those of *Lanius collurio*, and in colour dull greenish grey or greyish sea-green, marked here and there with purplish underlying shell-blotches and brown overlying surface-spots; all the eggs I have seen have also peculiar purplish or brown lines fantastically drawn on the surface of the shell, and which are not unfrequently collected together so as to form a sort of wreath round the larger end. In size those in my collection vary from $\frac{35}{40}$ by $\frac{25}{40}$ to $\frac{38}{40}$ by $\frac{27}{40}$ inch.

Mr. Sachse, who has found it breeding near Altenkirchen, says that it arrives at its breeding-haunts in March, but does not commence nidification until the trees are covered with foliage. Here, he writes, "the nest is placed in an oak- or beech-tree, especially such as are overgrown with grey lichens; and it is built from about two to fifteen metres above the ground, always close tothe main stem of the tree; and when on an old gnarled beech tree, it is very hard to find. The nest is built, first, of small dry twigs, on a platform of which a neatly formed structure of roots and plant-stems is placed, and is ornamented with white moss, resembling at the first glance from below the nest of a Missel-Thrush. The eggs, from five to six in number, are deposited late in May or early in June, as I have taken them from the 7th May to the 3rd June.

"When the young are hatched they are most carefully tended by the parent birds until long after they can fly. The old birds do not seem to care so much for their eggs, as when these are taken they seldom put in an appearance, but immediately come close to the intruder should the nest be invaded when the young are hatched. When I took the young bird above described, the old ones came and flew close round, uttering a harsh note of alarm and anxiety.

"So far as I can ascertain, this species does not raise two broods in the season; but should the first nest be destroyed, I think it most probable that they will build another; and in such case the brood would be a late one."

The specimens figured are an adult male from Spain in the foreground to the right, an adult British specimen in the background, and a young bird on the left in the foreground, all being in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Cookham, Berks, February 21st, 1870 (*R. B. Sharpe*). *b*, ♀. Hampstead, April 1870 (*Davy*). *c*, *d*, ♂ *juv.*, *e*, *f*, ♀ *juv.* Hampstead (*Davy*). *g*, ♂ *juv.* Staufen, Baden, June 1875 (*H. E. D.*). *h*, ♂. Granada, Spain, May 1871 (*H. Saunders*). *i*, ♀. San Roque, Spain, March 12th, 1871. *k*, ♀. Rome, January 1853 (*P. L. Sclater*). *l*, ♂. Albania (*Hanbury Barclay*). *m*, ♂. Olympus, Macedonia, October 27th, 1869 (*Dr. Krüper*). *n*, ♂. Olympus, December 22nd, 1869 (*Dr. Krüper*). *o*, ♂. Crimea (*Whitely*). *p*, ♀. Alexandria (*S. Stafford Allen*).

E Mus. R. Swinhoe.

a, ♂, *b*, ♀. Pekin, China, October (*Père David*). *c*, ♀. Hakodadi, Japan (*Blakiston*).

E Mus. Howard Saunders.

a, ♂, *b*, ♀. Highgate, May 20th, 1869. *c*, *d*, ♂, *e*, ♀. Granada, March, April. *f*, ♂ *juv.* Malaga, July 28th. *g*, ♂. Valencia, November 7th.

E Mus. C. A. Wright.

a. Malta, 1866 (*C. A. W.*).

Genus PASSER.

Passer, Brisson, Orn. iii. p. 72 (1760).
?*Pyrrhula* apud Brisson, tom. cit. p. 314 (1760).
Fringilla apud Linnæus, Syst. Nat. i. p. 323 (1766).
?*Loxia* apud Gmelin, Syst. Nat. i. p. 854 (1780).
Pyrgita apud Boie, Isis, 1822, p. 554.
Loxia apud Lichtenstein, fide Less. Traité d'Orn. p. 439 (1831).
Corospiza apud Bonaparte, Consp. Gen. Av. i. p. 511 (1850).

The Sparrows form a very natural group, and one which, though closely allied to the other groups of Finches, is well worthy of generic separation. They follow closely on the footsteps of civilization, and have therefore spread over the Palæarctic, Ethiopian, and Oriental Regions, and have also been introduced into the Nearctic and Australian Regions, where they are rapidly spreading. Five species are resident in the Western Palæarctic Region. They inhabit groves, gardens, woods, and especially places close to human habitations. They are active, noisy birds, tame, and fearless to a degree, omnivorous, though chiefly feeding on seeds and insects. They have no regular song, but only a chirp, which, however, is frequently modulated into a succession of pleasing notes. They build bulky nests, dome-shaped, constructed of straws &c., lined with feathers, and placed either in a tree or a hole or under the eaves of a roof, and deposit dull-white eggs closely freckled and marked with grey and brown.

Passer domesticus, the type of the genus, has the bill moderately short, conical, straight, nearly as broad as high at the base; nostrils basal, round, nearly hidden by recurved stiff feathers; wing moderately long, rather broad, the first quill very small and attenuated, the three next almost equal in length, the third, if any thing, the longest; tail moderately long, slightly emarginate; legs rather stout, the tarsus covered in front with four large and three inferior scutellæ; toes rather slender, claws moderately long, arched, laterally grooved, acute.



J.Gdé.Lemaire lith

M&N Hanhart imp

1. COMMON SPARROW.
PASSER DOMESTICUS.
2. ITALIAN SPARROW.
PASSER ITALIÆ

PASSER ITALIÆ.

(ITALIAN SPARROW.)

Fringilla italiæ, Vieill. Nouv. Dict. xii. p. 199 (1817).
Fringilla cisalpina, Temm. Man. d'Orn. i. p. 351 (1820).
Pyrgita italica, Bp. Comp. List, p. 31 (1838).
Pyrgita cisalpina (Temm.), Rüpp. Neue Wirbelth. p. 100 (1835–40).
Passer domesticus, var. β. *italicus*, Keys. & Blas. Wirbelth. Eur. p. 40 (1840).
Passer domesticus cisalpinus, Schlegel, Rev. Crit. p. 64 (1844).
Passer cisalpinus (Temm.), Rüpp. Syst. Uebers. p. 78. no. 292 (1845).
Passer italiæ (Vieill.), Degl. Orn. Eur. i. p. 207 (1849).
Pyrgita cisalpina (Temm.) C. L. Brehm, Vogelfang, p. 98 (1855).

Moineau cisalpin, French; *Passera*, *Passera reale*, Italian.

Figuræ notabiles.

Werner, Atlas, *Granivores*, pl. 39; Roux, Orn. Prov. pl. 82 bis; Vieill. Gal. Ois. i. pl. 63; Bonap. Faun. Ital.

Ad. P. domestico similis, sed corpore suprà coloribus clarioribus, pileo toto castaneo, capitis lateribus magis albis, striâ albâ a fronte supra oculos, regione circumoculari nigrâ: corpore reliquo ut in *P. domestico* picturato.

Adult Male (Genoa). Differs from *Passer domesticus* in having the upper parts rather more brightly coloured, the cheeks whiter, the entire crown and nape rich chestnut-red; from the forehead over and behind the eye a white streak passes; lores and space round the eye, but chiefly below it, black; rest of the plumage as in *Passer domesticus*.

Adult Female (Modena). Undistinguishable from the female of *Passer domesticus*.

Obs. In winter plumage the bill is dull yellowish, and not black, and the feathers on the crown have, to some extent, narrow dull greyish edgings.

The present species is one very closely allied to *Passer domesticus*, but differs constantly from that species by its rufous head. It is somewhat difficult to state precisely the exact limits of its range, it having been in so many instances almost hopelessly confused with *Passer hispaniolensis*, and even with *Passer domesticus*; but after a careful perusal of all that I can find on record respecting our European Sparrows, and a critical examination of specimens from various localities in Southern Europe, I feel convinced that it is only met with on the mainland of Italy, beyond the Alps, and does not occur on the islands of the Mediterranean. It is said to have occurred in Spain; but Colonel Irby doubts the authenticity of the specimen said to have been obtained there; and Captain Cooke Widdrington expressly states that, although on the look-out for this form in

Spain, and having already made its acquaintance in Italy, he never found it in any part of the peninsula, not even in Catalonia; and in this all naturalists who have visited the country seem to be agreed. Mr. Howard Saunders informs me that he failed to find it in the island of Majorca, though he carefully examined the heaps of Sparrows brought into the markets, and careful research on the east coast of Spain resulted in the same way. It is said by Messrs. Jaubert and Barthélemy-Lapommeraye to have occurred in Provence in the autumn; but at this season the colour of the crown in *Passer domesticus* is sullied with brown, and I cannot help thinking that specimens of the common Sparrow have been mistaken for the present species; and, so far as I can judge, it never appears to cross the Alps. Temminck states (Man. d'Orn. iii. p. 257) that it breeds on the summit of Mont Cenis; but this statement is expressly denied by Bailly. It is first met with about Susa, on the Italian side, whence it is found about the mainland of Italy, replacing *Passer domesticus*—the latter, however, being resident at Nice, and occurring in small numbers at Turin and other parts of Piedmont, as far as the province of Venetia, where it is very rare.

The Italian Sparrow is stated by Salvadori not to occur in the island of Sardinia; and both he and Professor Doderlein say that it is not known in Sicily, the records of its occurrence being based on immature examples of *Passer hispaniolensis*, which is abundant. Mr. C. A. Wright has stated that it is found in Malta; but I have examined specimens from that island labelled by this gentleman as being Italian Sparrows, and I have invariably found them to be Spanish Sparrows out of plumage or in immature dress. The present species has been also recorded by Mr. C. Bygrave Wharton as found in Corsica; but he has brought no specimens to confirm his statement, which does not agree with what Salvadori says, and I am inclined to doubt its occurrence there. Nor can I believe that it has occurred in other countries, as for instance Greece, Asia Minor, and Algeria, where it has been stated by various authors to have been met with; doubtless *Passer hispaniolensis* has in every such instance been mistaken for it.

In habits and nidification the present species does not differ from its near ally, *Passer domesticus*. I possess eggs from Italy which are undistinguishable from those of that species.

The specimen figured, on the same Plate with *Passer domesticus*, is an adult male from Italy, in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, ♀. Italy (*Salvadori*).

E Mus. Howard Saunders.

a, ♂ *ad.* Genoa. *b*, ♂ *ad.* Genoa, August 30th, 1869 (*F. Nager-Donazian*). *c*, ♂, *d*, ♀. Modena (*Doderlein*).

E Mus. R. Swinhoe.

a, *b*, ♂. Liguria (*Salvadori*).

PASSER DOMESTICUS.

(COMMON SPARROW.)

Passer domesticus, Briss. Orn. iii. p. 72 (1760).
Fringilla domestica, L. Syst. Nat. i. p. 323 (1766).
Passer domesticus (L.), Koch, Baier. Zool. i. p. 219 (1816).
Pyrgita domestica (L.), Boie, Isis, 1822, p. 554.
Pyrgita pagorum, C. L. Brehm, Vög. Deutschl. p. 265 (1831).
Pyrgita rustica, C. L. Brehm, op. cit. p. 266 (1831).
Passer indicus, Jardine & Selby, Ill. Orn. iii. pl. 118.
Passer arboreus, Licht., fide Bp. Consp. Gen. Av. i. p. 510 (1850).
Pyrgita valida, C. L. Brehm, Vogelfang, p. 98 (1855).
Pyrgita minor, C. L. Brehm, op. cit. (1855).
Pyrgita brachyrhynchos, C. L. Brehm, op. cit. (1855).
Pyrgita intercedens, C. L. Brehm, op. cit. (1855).
Passer rufidorsalis, C. L. Brehm, Naumannia, 1856, p. 376.
Passer rufidorsalis megarhynchus, C. L. Brehm, ut suprà.
Passer rufidorsalis microrhynchus, C. L. Brehm, ut suprà.
Passer tingitanus, Bp. Cat. Parzud. p. 18 (1856).
Pyrgita cahirina, Pr. Würt. Icon. ined. fide Heugl. J. f. O. 1867, p. 299.
Pyrgita pectoralis, Pr. Würt. Icon. ined. fide Heugl. ut suprà.
Pyrgita melanorhynchus, Pr. Würt. Coll. Mergenth. fide Heugl. Orn. N.O.-Afr. i. p. 628 (1871).
Pyrgita castaneus, Pr. Würt. Coll. Mergenth. fide Heugl. ut suprà (1871).
Pyrgita castanotus, Pr. Würt. Coll. Mergenth. fide Heugl. ut suprà (1871).

Gealbhan, Gaelic; *Moineau domestique*, French; *Pardal*, Portuguese; *Gorrion*, Spanish; *Passera europea*, Italian; *Haussperling*, German; *Musch*, Dutch; *Graaspurv*, Danish; *Graaspurv*, Norwegian; *Hussparf*, Swedish; *Kotivarpunen*, Finnish; *Vorobey*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 6. fig. 1, and 55. fig. 1; Werner, Atlas, *Granivores*, pl. 38; Kjærb. Orn. Dan. taf. 26; Frisch, Vög. Deutschl. taf. 8. figs. 1, 2; Fritsch, Vög. Eur. taf. 20. fig. 16; Naumann, Vög. Deutschl. taf. 115; Sundevall, Svensk. Fogl. pl. 6. figs. 1, 2; Gould, B. of Eur. pl. 184. fig. 1; id. B. of G. Brit. iii. pl. 32; Schlegel, Vog. Nederl. pl. 161.

♂ *ad.* capite suprà et nuchâ cinereis: loris nigris: pone oculum fasciâ castaneâ, posticè, ad latera cervicis, latiore: dorso rufescenti-brunneo, plumis nigro striatis et sordidè ochraceo marginatis: uropygio et supracaudalibus sordidè cinereis vix brunneo tinctis: remigibus nigro-fuscis, primariis vix, secundariis

conspicuè pallidè rufescente brunneo extùs marginatis : tectricibus alarum majoribus ad basin cinereis, in parte apicali castaneis, vix rufescente cervino apicatis et nigro notatis : tectricibus minoribus castaneis nigro notatis et albo apicatis : caudâ saturatè fusco-cinereâ, rectricibus extùs grisescente cervino marginatis : gulâ et jugulo usque ad pectus nigris, plumis in parte imâ vix cinereo apicatis : a maxillâ inferiore ad latera juguli striâ albâ productâ : corpore subtùs griseo-albo, hypochondriis cinereo lavatis : abdomine et subcaudalibus vix cervino tinctis : rostro nigro : iride fuscâ : pedibus pallidè brunneis.

♀ *ad.* capite et collo suprà pallidè brunneis : dorso sordidè brunneo, nigro et sordidè ochraceo notato, uropygio pallidè fusco-cinereo : caudâ ut in mare picturatâ sed pallidiore : alis pallidioribus et brunnescentioribus, fasciâ alari rufescenti-albidâ : gulâ, gutture et corpore subtùs griseo-albidis : rostro brunnescenti-griseo, mandibulâ carneo tinctâ et ad basin flavidâ.

♂ *ad. ptil. hiem.* pileo sordidiore et vix brunneo tincto, plumis castaneis in capite brunnescente cinereo marginatis : gulæ plumis pallidè cinereo apicatis : rostro ut in fœminâ colorato, sed vix saturatiore.

Adult Male in summer (Constantinople). Crown and nape ashy grey; lores black; a broad streak on the sides of the head and crown, joining and broadening on the hind neck, chestnut-red; back dull chestnut-red, the feathers broadly streaked with black, and here and there lighter, margined with almost dull sandy ochreous; lower back, rump, and upper tail-coverts dull ashy grey with a faint brownish tinge; quills blackish brown, externally margined with light reddish buff, broadly at the base and narrowly towards the tip, secondaries broadly margined with pale rufous; larger wing-coverts ashy at the base, chestnut on the terminal half, slightly tipped with warm buff and marked with black; lesser wing-coverts chestnut-red, marked with black and broadly tipped with white; tail blackish grey, the feathers externally margined with light greyish buff; sides of the head and neck, below the chestnut band, white; chin and throat black; underparts greyish white, the sides of the breast and flanks washed with ashy grey; abdomen and under tail-coverts faintly tinged with buff; bill black; iris dark brown; legs light brown. Total length about 6·25 inches, culmen 0·48, wing 2·9, tail 2·38, tarsus 0·77.

Adult Female (Hareskov, Denmark). Head, neck, and upper parts dull dusty brown, the head and hind neck uniform, a light stripe passes over and behind the eye to the hind neck; back marked with black and dull light ochreous buff; rump tinged with greyish; tail as in the male, but paler; quills as in the male, but paler; larger wing-coverts blackish brown, broadly margined with rufous buff; lesser coverts blackish, more narrowly edged, and tipped, with creamy buff; underparts pale ashy with a brownish tinge, darker on the flanks, and lighter on the throat and centre of the abdomen; bill brownish grey, the lower mandible with a fleshy tinge, and yellowish at the base; iris and legs as in the male.

Adult Male in winter (Hareskov, Denmark, 7th January). Differs from the male in summer dress in having the crown duller and with a dusty brownish tinge, the chestnut colour on the head partly concealed by dull brownish-ashy edges to the feathers; the black feathers on the throat have also ashy tips; and the bill is coloured like the female, only rather darker, and not black as in the summer dress.

Young. Resembles the female.

Throughout Europe the House-Sparrow is very generally distributed almost wherever there are human habitations (except in the extreme north); for it follows the footsteps of man almost like a domestic animal, and where he fixes his habitation there the Sparrow also takes up its abode. In Africa it is resident in the northern portion of the continent; and specimens from there are

clearer in colour than those from Northern Europe, agreeing closely with Indian examples. I cannot think that there are good grounds for separating the bird found in Asia from the European species; and thus the range extends eastward in Asia to Siam.

Throughout Great Britain it is resident and common, even on the Shetland and Orkney Islands; and in Ireland it is as common as in England or Scotland. It does not appear to have been met with in the Færoes; but in Scandinavia it is very common and resident. Mr. Collett says that it is common in Norway up to Lofoten, and is met with now and again in East Finmark; but it more properly belongs to the eastern portion of the interior, and is entirely wanting in some portions of Christiansand and Bergen stifts. On the fell-sides it is found near dwellings up into the birch-region, as for instance on the Dovre. Pastor Sommerfelt says that now and again a straggler is seen on the Varanger fiord; but as yet it has not made good its footing either on Vardö or Vatsö. In Sweden, as in Norway, it is very generally distributed and common; and I found it numerous near human habitations in every part of Finland I visited. In Russia it is very generally distributed, ranging far north in the Archangel Government; and throughout Europe generally it is probably the most widely distributed and common species, being everywhere resident, except where in some countries it is partially replaced by its allies *Passer hispaniolensis* and *P. italiæ*. In Spain, for instance, where the present species is common in the towns or near houses, its place is taken in the fields and groves by *P. hispaniolensis*; and in Italy it is in most parts replaced by *P. italiæ*. It inhabits the Riviera as far as Nice, and straggles through the valleys of the Alps to the Italian side; but there its place is taken by *P. italiæ*; and it does not occur beyond the northern provinces, nor does it occur in Sicily or Sardinia, and it is not recorded from Malta. Lord Lilford records it as resident, but not very abundant, in Corfu and Epirus; and it is found commonly in Greece, Turkey, Southern Russia, and Asia Minor wherever there are human habitations. It is also found in Northern Africa, where, as elsewhere, it is resident. Von Heuglin states (Orn. N.O.-Afr. i. p. 629) that it is a resident in Egypt, Nubia, in some of the towns to the north of the Red Sea, on the Blue Nile, and in Kordofan, but he did not observe it in Eastern Abyssinia or on the White Nile. In North-west Africa it is stated by Loche to be found in Algeria near habitations, but it is not generally distributed. Mr. Taczanowski found it common in the province of Constantine; and Mr. J. H. Gurney, jun., says (Ibis, 1871, p. 293) that he "found it abundant in the Mzab, at Laghouat, and also in the Tell." Colonel Irby also says that it is common on the African side of the Straits of Gibraltar. Vernon Harcourt records it from Madeira; but it does not seem to have been met with in the Canaries. In Asia the Sparrow has also an extensive range; for I cannot look on the Asiatic bird as any thing but a slightly brighter-coloured form of our European bird, without any just claim to specific rank. In size the Indian form runs somewhat smaller; but there is a considerable individual difference between specimens in the series both from Europe and Asia. Thus European examples vary in the length of the wing from 2·95 to 3·12; one from Tangier, which in coloration closely agrees with Indian examples, has the wing 3·1 inches long; the wing of one from Baluchistan measures 3·05; wings of examples from India vary from 2·7 to 3·0; and that of one from Ceylon measures 2·95.

De Filippi speaks of it as being common throughout the districts visited by him; and Mr. Blanford informs me that both the eastern and western forms of our Sparrow occur in

Persia, specimens from the Caspian resembling European examples, whereas others from the plateau and the southern part of the country agree best with the Indian form. He agrees with me in considering that the two forms are not specifically separable. Mr. Hume states that it is very abundant throughout Sindh; and Dr. Jerdon says (B. of India, i. p. 363) that it is "generally diffused all over India, from the extreme south and Ceylon to the foot of the Himalayas, and eastwards to Assam, Arrakan, and Upper Pegu, and also to Siam, according to Crawford. It is less abundant on the Malabar coast and, generally, in the very rainy districts; and Quilon is said to be exempt from its society. . . . . It is not found at Darjeeling; but it occurs on the N.W. Himalayas up to a moderate height." Dr. Henderson says that it is common in Cashmere and Ladak, but he never met with it in Yarkand; but Dr. Severtzoff informs me that he found it common and resident. It inhabits Siberia; and Von Middendorff says that on the Ienesei he met with it up to Worogowo in 61° N. lat., above which its place was taken by the Tree-Sparrow. At Udskoj-Ostrog he did not observe it; and from Amginskaja-Sloboda out he did not meet with it until he reached Us'tjs'trelins'kij-Karaul, where the Schilka and the Argunj join. Von Schrenck did not meet with it in the Amoor country, nor did Dr. Radde, who says that he first observed it at the Changinskischen post. He met with it here and there on the west side of Lake Baikal; and thence it has straggled to the island of Olchon.

The above seems to be, as near as I can ascertain, the natural geographical range of the common Sparrow; but being a species easy to acclimatize, and as it is so extremely useful in destroying noxious insects, it has been very extensively introduced into far distant countries. It is now tolerably common in and near several towns in the United States of America, and is also acclimatized in Cuba, being, Dr. Gundlach says, common in and near Havana. I am indebted to Mr. Edward Newton for examples from Mauritius, where it has become common, which agree closely with specimens from Southern Europe. It has also been taken to New Zealand and Australia, and is now, Captain Hutton says, becoming very numerous at Auckland.

It is scarcely necessary to give any details respecting the habits of so well-known a bird as the House-Sparrow; for not only is it found in villages and wherever there are habitations in the country, but even the grimy slums in the midst of the vast wilderness of bricks and mortar in our large cities are tenanted by the ubiquitous Sparrow; and the city Arab, who has never beheld a green field or roamed beyond the maze of streets in the midst of which he picks up a precarious livelihood, is as well acquainted with the Sparrow as is the more fortunate country lad who has never breathed any but the pure untainted country air. And there is quite as much difference in appearance between the country Sparrow and the town Sparrow as there is between the rosy-cheeked young chawbacon and the stunted, gaunt, and preternaturally sharp street-urchin; for whereas the country bird is clean, its colours are bright, and the plumage even elegant, the grimy dirty-looking town Sparrow has its plumage rendered so dingy by the smoky atmosphere, that it is hard to distinguish what the real colours are; but nevertheless it is as pert and self-asserting as if it were clad in the brightest apparel. Usually found in close proximity to houses, the Sparrow frequents the gardens, yards, and such places in the country, where it can pick up any leavings, seeds, or insects that may come in its way, or else it frequents, especially in the autumn, the cultivated fields and stack-yards in search of grain. In the town the Sparrow subsists chiefly on the undigested grain in the droppings in the streets, or else it

picks amongst the refuse thrown out from the houses for any remnants of food that may have been cast out amongst it.

In open places where there are a few trees in the towns, such as the gardens in the squares or in the parks, it is eminently useful in ridding the foliage of the insects which would otherwise destroy the leaves and tender shoots; and its utility in this respect has led to its being introduced into the United States, where in the main streets there are avenues of trees which, previous to the introduction of the present species, were rendered bare and leafless by the ravages of caterpillars. During the breeding-season insects, whenever they are to be had, form the staple food of both old and young birds. Mr. Snell says that it is very fond of the seeds of *Polygonum aviculare*; and it may occasionally be seen to catch the common white butterflies (*Papilio brassicæ* et *rapæ*) on the wing, though not so frequently as one could wish. It destroys, however, myriads of the small smooth caterpillars and larvæ which feed on the buds of the trees, and is one of the best guardians of the orchard. It is true that it also takes toll of the fruit; but one can well spare a little when one reflects how much the crop of fruit is dependent on its active labours in destroying these noxious insects.

The Sparrow is eminently gregarious: even during the breeding-season one observes it in small groups searching after food; and in the autumn and winter they collect in flocks and frequent the hedges and stack-yards, and are often seen in very large flocks in the corn-fields. Though bold and impudent to a degree, the Sparrow is by no means unwary; and though in the street it will hardly hop out of the way of a passing horse or any one walking along the path, yet when abroad in the fields or in a stack-yard it will keep a careful watch, and, should it perceive a suspicious person prowling about, it is careful to keep well away from him, and will not permit him to approach within gunshot-range.

The note of the Sparrow is a lively chirp, often repeated, especially when it passes in and out of its nesting-hole, or when two or three are collected together, as if holding converse over the state of affairs in general and their own immediate prospects in particular. They often collect together to roost in large flocks, and retire for the night in some large closely foliaged tree or in some ivy-covered gable-end or wall. When a lad, living in the country, I used often in the evening to come strolling home with my gun loaded; close to our house was a huge old fir tree, which had been broken off and had thrown out a dense mass of branches round the top; in this a vast number of Sparrows used to roost; and I am ashamed to say that I have not unfrequently wantonly discharged my gun at random into the thickest part of the tree, and rarely failed to bring down one or more of the unfortunate occupants. When collecting together to retire for the night, the Sparrows keep up an incessant chirping or chattering until they have settled down comfortably to rest. They are very fond of dusting themselves when the roads are dry, and may be seen fluttering and casting up the dust with evident satisfaction, continuing this action for some time; and they have also a partiality for basking in the sun like the barn-door fowl. The flight of the Sparrow is rapid and undulating, like that of the other Finches; and on the ground it progresses by hops with apparent ease.

Early in the spring pairing takes place; and the males then fight desperately for the possession of the females. Several males may then be seen engaged in combat, incessantly uttering their usual note in a loud angry tone; but when they have paired, the males meet without the

least sign of animosity. The nest is placed in some hole or cranny in a wall or chimney, under the eaves or amongst the thatch of a roof, or else amongst the ivy or in a tree or large bush. It is a bulky structure, often rather carelessly, though warmly, constructed of straws, grass-bents, woollen or cotton rags, &c. &c., and carefully lined with feathers or other soft materials. The eggs, usually from four to six in number, are greyish white or French-white, more or less blotched and spotted with pale grey underlying shell-markings and greyish black or brownish black surface-spots; but some are very closely freckled or spotted all over with grey and brown. They differ much in coloration, size, and shape; but the normal size appears to be about $\frac{35}{40}$ by $\frac{24}{40}$ inch.

The specimen figured (on the same Plate with *Passer italiæ*) is the adult male above described. As the female so closely resembles the female of *Passer hispaniolensis*, I have not deemed it necessary to figure it.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Hampshire, January 1848 (*P. L. Sclater*). *b*, ♀. Copenhagen, October 1870 (*Benzon*). *c* ♂. Copenhagen, December 1870 (*Benzon*). *d*, ♀, *e*, ♀, *f*, ♂, *g*, ♂. Hareskov, January 1871 (*Benzon*). *h*, ♂. Copenhagen, February 1871 (*Benzon*). *i*, ♀. Nislefgaard, Denmark, November 1870 (*Benzon*). *j*, ♂. Constantinople (*Robson*). *k*, ♀. Olympus, October 1869 (*Dr. Krüper*). *l*, ♂. Tangier (*Olcese*). *m*, ♂. Baluchistan, March 1872 (*W. T. Blanford*). *n*, ♂, *o*, ♂. Etawah, August 29th (*W. E. Brooks*). *p*. Ceylon.

E Mus. Howard Saunders.

a, ♂ *ad.*, *b*, ♀ *ad.* Valencia, March. *c*, ♂ *im.* Murcia, November 16th. *d*, *e*, ♂ *im.* Malaga, January 1st and 7th. *f*, *g*, ♀. Granada, April and May. *h*, ♂ *ad.* Malaga, April 6th. *i*, ♂ *ad.* Andraix, Isle of Majorca, May 20th, 1870 (*H. S.*).

E Mus. R. Swinhoe.

a, *b*, ♂. England. *c*, ♂. Bengal (*Blyth*).



J. Wolf & J. Wolfenmans lith. M&N Hanhart imp.

SPANISH SPARROW.

PASSER HISPANIOLENSIS

PASSER HISPANIOLENSIS.

(SPANISH SPARROW.)

Fringilla hispaniolensis, Temm. Man. d'Orn. i. p. 353 (1820).
Fringilla cisalpina, Aud. Descr. de l'Eg. p. 285, pl. 5. fig. 7 (1825).
Fringilla salicicola, Vieill. Faune Franç. p. 417 (1828).
Pyrgita hispanica, C. L. Brehm, Vög. Deutschl. p. 266 (1831).
Pyrgita ægyptiaca, C. L. Brehm, ut suprà (1831).
Pyrgita orientalis, C. L. Brehm, ut suprà (1831).
Pyrgita arcuata, C. L. Brehm, ut suprà (1831).
Pyrgita salicaria, Bp. Comp. List, p. 30 (1838).
Pyrgita hispaniolensis (Temm.), Rüpp. Neue Wirbelth. p. 100 (1835–40).
Passer domesticus, var. γ. *salicarius*, Keys. & Blas. Wirbelth. Eur. p. 40 (1840).
Passer salicarius (Bp.), Schlegel, Rev. Crit. p. 64 (1844).
Passer hispaniolensis (Temm.), Degl. Orn. Eur. p. 209 (1849).
Passer salicicola (Vieill.), Bp. Consp. Gen. Av. i. p. 509 (1850).

Spanish Sparrow, *Willow Sparrow*, English; *Moineau espagnol*, French; *Pardal*, Portuguese; *Gorrion*, Spanish; *Zasuch*, Arabic.

Figuræ notabiles.

Gould, B. of Eur. pl. 185. fig. 1; Roux, Orn. Prov. pl. 84.

♂ *ad. ptil. æst. P. domestico* similis, sed pileo lætè castaneo, dorso saturatiore, dorsi plumis nonnullis ad basin albis et eodem colore marginatis: tectricibus alarum minoribus nigricantibus, nonnullis vix fulvido marginatis: gulâ, gutture et pectore saturatè nigris, hypochondriis valdè nigro striatis: rostro nigro, iride fuscâ: pedibus pallidè cinnamomeis.

♀ *ad.* haud a fœminâ *P. domestici* distinguenda.

♂ *ad. ptil. hiem.* corpore suprà pallidiore quam in ptilosi æstivali, pilei et nuchæ plumis fusco-cinereo marginatis: hypochondriis et pectore sordidioribus, plumis albido marginatis: rostro sordidè flavicante.

Adult Male (Aranjuez, Spain, 14th May). Differs from the male of *Passer domesticus* in having the crown rich chestnut-red, the back darker, some of the feathers with broad white margins and white at the base; the lesser wing-coverts are blackish, some with narrow light fulvous edges; the throat (except at the sides), the breast, and sides of the breast and lower neck are deep black, the flanks being broadly striped with black; beak black; legs light cinnamon; iris dark brown. Total length about 6 inches, culmen 0·52, wing 3·05, tail 2·45, tarsus 0·85.

Adult Female (Seville, March). Resembles the female of *Passer domesticus* so closely that I can discover no character by which it may with certainty be distinguished.

Adult Male in winter (Souf, 3rd January). Upper parts lighter than in summer, the feathers having light edges, those on the crown and nape with brownish grey edges; throat black, but the feathers on the breast and flanks obscured by having white edges; bill dull yellowish.

Comparatively speaking the range of the Spanish Sparrow is not extensive; for it only inhabits Southern Europe, North Africa, and the Canaries, occurring in Asia as far east as the Punjab. Professor Barboza du Bocage includes it in his list of the birds of Portugal; but the Rev. A. C. Smith says (Ibis, 1868, p. 455) that, though conjectured to visit Portugal, it has not yet been identified in that country. It is, however, very common in Spain, where it inhabits the groves, nesting in the trees, whereas in the towns and near inhabited places its place is taken by *Passer domesticus*. Colonel Irby states (Orn. Str. Gibr. p. 120) that it is very local in its distribution, and is in some places very abundant. I observed it in Catalonia amongst the small birds exposed for sale in the markets, and found it extremely numerous near Aranjuez and in other places not far from Madrid. It frequently builds in the foundations of the nests of the larger birds of prey; and Colonel Irby mentions that he found the nest of a Spanish Sparrow underneath that of a *Buteo desertorum*. Messrs. Degland and Gerbe state that the present species occurs regularly on passage in the south of France; but this I greatly doubt; for Messrs. Jaubert and Barthélemy-Lapommeraye are unaware of any authentic instance of its occurrence, and the reputed capture of one near Nimes, recorded by Crespon, appears to lack confirmation. On the mainland of Italy it is replaced by *Passer italiæ*, which species it again replaces in Sicily, Sardinia, Corsica, and Malta, on which islands it appears to be tolerably common. I have examined specimens collected by Mr. C. A. Wright on Malta, some of which he took to be the Italian Sparrow; but all, without exception, are referable to the present species. In Greece it is by no means common, and very local: Dr. Krüper says that it only occurs in some few localities in Acarnania and Ætolia; and Von der Mühle states that he only observed it on two occasions. According to Messrs. Elwes and Buckley, Mr. Robson obtained several specimens near Constantinople; and doubtless the present species is the one referred to by Professor von Nordmann, who states that he has seen many male Sparrows from Abasia which had chestnut heads. Dr. Krüper informs me that the Spanish Sparrow abounds in Asia Minor, and is a perfect pest; and Canon Tristram, who met with it in Palestine, states (Ibis, 1867, p. 370) that there it is "confined chiefly to the Ghor, or Jordan valley, where it congregates at all times of the year in countless myriads, breeding in colonies, so crowded that I have seen the jujube-trees absolutely broken down under the weight of their nests, whilst their noise is so deafening that it is impossible to carry on conversation in their 'rookeries.' I have known their eggs brought in by thousands, but I never saw any variety approaching the dark varieties of the egg of the common Sparrow. This bird, like the Doves, feeds largely on the leaves of leguminous plants. It is also found in moist wooded districts in other parts of the country, though not in such vast numbers as in the Ghor; but it never becomes a denizen of the towns." Mr. C. W. Wyatt met with it in the Sinaitic peninsula, where, however, he only observed it in the oases in Wády Feirán.

In North-east Africa it appears to be a winter visitant; for Captain Shelley states (B. of Egypt, p. 149) that, though numerous in the winter season, it rarely, if ever, remains late enough to breed, and he never observed any later than the early part of February. Von Heuglin says that he observed it in parties in Lower and Central Egypt and Nubia, southward to

Ambukol. Hartmann met with it on the upper part of the Blue Nile. In North-western Africa, however, it is very common, and breeds in vast numbers. Loche remarks that it very frequently builds in the nest of one of the larger birds of prey; and both Mr. Osbert Salvin and Canon Tristram testify to the vast numbers which breed in Algeria. Colonel Irby records it from the African side of the Straits of Gibraltar, and adds that there, as on the Spanish side, it is very local in its distribution.

Dr. Anton Dohrn speaks of it as being very common on the Cape-Verd Islands, where my artist, Mr. Keulemans, also met with it. Dr. Carl Bolle states (J. f. O. 1857, p. 305) that, though hitherto it was only known from Lanzarote and Fuerteventura, he frequently observed it in 1856 in Canaria; and Mr. Godman says (Ibis, 1872, p. 210) that he obtained it at Palma in Gran Canary, where it is not uncommon, but it does not appear to go so far westward as Teneriffe.

To the eastward the Spanish Sparrow appears to extend no further than Western India. In Persia, according to Mr. Blanford, it is apparently scarce. He obtained two specimens—one from Ghistigan, Baluchistan, and the other from the south-west of Karman. Dr. Jerdon says (B. of India, ii. p. 364) that within his limits "it has only occurred at Peshawar and Shikapore, but it appears to be common further west in Afghanistan. It is said to be common at Kandahar. Mr. A. O. Hume states (Stray Feathers, i. p. 209) that it is only a straggler in Sindh; but invades nearly the whole Punjab in vast flocks during the cold season. This gentleman writes (Ibis, 1868, p. 240) as follows:—"The Willow-Sparrow is found throughout the Sirsa and Hansie districts. In the Duab, at Etawah, and near Gwalior I have shot single specimens; but about Sirsa it is found associated in immense flocks with the common Sparrow (*Passer indicus*). In some flocks these latter are mere stragglers; in others they form nearly one half of the party." According to Dr. Severtzoff it is met with, though rarely, in Turkestan in the winter season.

Although in general habits the present species much resembles its more widely distributed congener *Passer domesticus*, yet in choice of habitat it widely differs from that species. Whilst the common Sparrow frequents human habitations, villages, towns, &c., being constantly and almost invariably found wherever human habitations are collected together, the present species avoids the close proximity of man, and resorts to the groves and the outskirts of woods, nesting in colonies in trees, and even in bushes. When in Spain I used to find it very numerous in some of the well-wooded localities at some distance from human habitations; and wherever the larger birds of prey were numerous, there the Spanish Sparrow was also to be found. I met with numerous nests built in the foundations of the nests of the Buzzard, Kite, Black Kite, and the Booted Eagle. In the foundation of one of the last I took four nests of the present species, one of which was close to the edge of the nest, only a few inches distant from the head of the Eagle, who was sitting on her eggs. Probably the Sparrows were too insignificant to be noticed or molested by the Eagles and Buzzards; and the position of the Sparrows' nests protected them from the depredations of the smaller birds of prey. In one place I found a large colony of these Sparrows breeding in several large trees, the nests being suspended amongst the smaller branches in such a manner that it was utterly impossible to take one without destroying the eggs. The nests were made like those of the common Sparrow when this latter nests in trees, but appeared to me to be rather more carefully and firmly constructed.

Canon Tristram states (Ibis, 1859, p. 293) that it affects moist places, especially among the reeds in the salt marshes, and always breeds near water, in vast colonies of many thousands; and Mr. O. Salvin writes (Ibis, 1859, p. 314) as follows:—"I found it in great numbers during the breeding-season among the tamarisk thickets on Chemora, and in the high sedge at Zana. The Arabs destroy the nests, eggs, and young wherever they find them, as their great numbers do much damage to the crops of corn. The nests are placed as thickly as they can stand—the whole colony consisting of perhaps one hundred pairs, occupying only five or six trees. The noise and ceaseless chattering proceeding from one of these 'Sparrow towns' can easily be imagined; and, guided by the sound alone, one may walk directly to the spot from a considerable distance."

I have a considerable series of the eggs of this Sparrow from Spain, which agree closely with clearly marked eggs of *Passer domesticus*; but I have never seen any dark varieties such as one frequently finds of the common Sparrow. The ground-colour is French white; and the markings, which are clearly defined, consist of pale purplish brown underlying shell-spots and dark brown surface-spots or blotches, these being generally distributed over the surface of the shell, though those at the larger end are larger and more closely collected together. In size they agree with those of *Passer domesticus*.

In note, flight, and general habits, except as above stated, the present species agrees closely with the common Sparrow, and is as pert, bold, and quite as noisy as that species.

The specimens figured are an adult male and female in full breeding-dress in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Spain, 1848 (*M. Fairmaire*). *b*, ♂. Aranjuez, Spain, May 14th, 1866 (*H. E. D.*). *c*. Seville (*Irby*). *d*, ♂. Cagliari, December 21st, 1863 (*Salvadori*). *e*, ♂. Malta, September 26th, 1862 (*C. A. Wright*). *f*, ♂. Malta, November 1862 (*C. A. Wright*). *g*, ♂, *h*, ♀. Tunis, February 1858 (*P. L. Sclater*). *i*, ♂. North Africa. *k*, ♂. Souf, January 3rd, 1857 (*H. B. T.*). *l*, ♂. Turbali, Asia Minor, April 27th, 1871 (*Krüper*). *m*, ♂. Smyrna, June 11th, 1863 (*Krüper*).

E Mus. Howard Saunders.

a, ♂ *ad.* Malaga, December 22nd, 1867. *b*, ♂ *juv.* Seville, November 12th, 1869. *c*, *d*, ♀. Seville, March 3rd. *e*, *f*, ♂. Seville, August 20th. *g*, ♂. Malaga, April 29th. *h*, ♂ *ad.* Malaga, April 4th. *i*, ♂ *juv.* Malaga, October 16th. *j*, ♂, *k*, ♀. Palermo, Sicily (*Doderlein*). *l*, ♂ *juv.* Malta, November 19th. *m*, ♂. Malta, December 15th (*C. A. Wright*). *n*, ♂. Turkestan, May 30th. *o*, ♂. Turkestan, September 12th (*Severtzoff*).

E Mus. H. B. Tristram.

a, ♀. Aranjuez, April 25th, 1865 (*Lord Lilford*). *b*, ♂. Aranjuez, May 8th, 1865 (*Lord Lilford*). *c*, ♂. Waregla, Sahara, December 1856 (*H. B. T.*). *d*, ♂, *e*, ♀. Rhodes, April 19th, 1858 (*H. B. T.*). *f*, ♂. Jericho, January 2nd, 1864 (*H. B. T.*). *g*, ♂. Fort of Hermon, June 4th, 1864 (*H. B. T.*). *h*, ♂. Kokand, 1874 (*Severtzoff*).



TREE SPARROW.
PASSER MONTANUS.

PASSER MONTANUS.

(TREE-SPARROW.)

Passer montanus, Briss. Orn. iii. p. 79 (1760).
Passer campestris, Briss. tom. cit. p. 82 (1760).
? *Pyrrhula hamburgensis*, Briss. tom. cit. p. 314 (1760).
Fringilla montana, Linn. Syst. Nat. i. p. 324 (1766).
Le Friquet, Buff. Hist. Nat. Ois. iii. p. 489 (1775).
L'Hambouvreaux, Buff. op. cit. iv. p. 398 (1778).
? *Loxia hamburgia*, Gmel. Syst. Nat. i. p. 854 (1780).
Fringilla campestris, Schrank, Fauna Boica, i. p. 181 (1798–1803).
Passer montanina, Pall. Zoogr. Rosso-As. ii. p. 30 (1811).
Passer montanus (L.), Koch, Baier. Zool. i. p. 219 (1816).
Pyrgita montana (L.), Cuv. Règne Animal, i. p. 385 (1817).
Pyrgita campestris, C. L. Brehm, Vög. Deutschl. p. 267 (1831).
Pyrgita septentrionalis, C. L. Brehm, op. cit. p. 268 (1831).
Passer arboreus, Blyth, in Rennie's Field Naturalist, i. p. 467 (1833).

Friquet, French; *Passera mattugia*, Italian; *Feldsperling*, *Waldsperling*, German; *Ringmusch*, Dutch; *Skovspurv*, Danish; *Spoarve*, Færoese; *Pilfinke*, Norwegian; *Pilfink*, Swedish; *Ketovarpunen*, Finnish; *Lesnoi-vorobey*, Russian.

Figuræ notabiles.

Edwards, Gleanings, pl. 269; D'Aubenton, Pl. Enl. 267. fig. 1; Werner, Atlas, *Granivores*, pl. 41; Kjærb. Orn. Dan. taf. 26; Frisch, Vög. Deutschl. taf. 1; Fritsch, Vög. Eur. taf. 20. fig. 13; Naumann, Vög. Deutschl. taf. 116. figs. 1, 2; Sundevall, Svensk. Fogl. pl. iv. fig. 7; Gould, B. of Eur. pl. 184; id. B. of G. Brit. iii. pl. 33; Schlegel, Vog. Nederl. pl. 162.

♂ *ad.* pileo, nuchâ et collo postico æneo-castaneis: dorso, alis et caudâ ut in *P. domestico* picturatis, sed tectricibus alarum minoribus et majoribus albido apicatis: loris et regione suboculari nigris; capitis et colli lateribus maculâ magnâ nigrâ utrinque notatis: mento, gulâ et gutture centraliter nigris: corpore subtùs albido vix griseo tincto, hypochondriis brunnescenti-cinereo lavatis, subcaudalibus pallidè brunnescenti-cinereis albido marginatis: rostro nigro: iride fuscâ: pedibus pallidè brunneis.

♀ *ad.* mari similis sed sordidior, mento et gulâ nec gutture nigris, pectore vix brunneo lavato.

Adult Male (Piedmont, 20th April). Crown, nape, and hind neck chestnut-red with a coppery tinge; back, wings, and tail as in *Passer domesticus*, except that the lesser and larger wing-coverts are both tipped with white, forming two distinct bands across the wing; lores and a narrow space below the eye black; sides of the head and neck white, with a large black patch on each side below the ear; chin and the

centre of the throat down to the upper breast deep black; underparts dull white with a greyish tinge, flanks washed with brownish ash; under tail-coverts pale ashy brown with dull white margins; bill black; iris brown; legs light brown. Total length about 6 inches, culmen 0·45, wing 2·8, tail 2·25, tarsus 0·7.

Adult Female (Amoy). Differs from the male merely in being duller in colour, the chin and upper throat alone being black, slightly marked with white, and the breast and flanks being washed with brown.

Winter plumage (Hareskov, Denmark, 6th January). In this plumage the bird differs only in having the upper parts, if any thing, a trifle greyer, and the black on the throat rather narrower and a little obscured on the lower part by whitish edges to the feathers.

Throughout Europe, from within the arctic circle to the extreme south, the present species is met with and is generally distributed. It is also found in North Africa; and in Asia it occurs as far east as Japan.

With us in Great Britain it is, though not so common as *Passer domesticus*, very generally, though somewhat locally, distributed, and resident, breeding as far north as Sutherlandshire. I have met with it in Kent, Middlesex, and Surrey; and it is found throughout the south of England, though it is very rare in some counties, and is, Yarrell says, "not included in the county catalogues of Sussex, Dorsetshire, Devonshire, or Cornwall;" but, he adds, there is a specimen in the Falmouth Museum. It is, I may state, certainly found in Dorsetshire; but Mr. J. C. Mansel-Pleydell says that it is nowhere numerous, and is more local in its distribution than the common Sparrow. Mr. Cecil Smith informs me that it is not common in Somersetshire, but is sparingly distributed over the greater part of the county. In Cambridgeshire it is very common, and also in Suffolk. Lord Lilford also writes to me as follows:—"The Tree-Sparrow is pretty common here [Lilford, Northamptonshire], and breeds regularly in some hollow ash trees in the park, as also occasionally in some old thorn bushes about the same locality. It is a permanent resident with us, frequenting the hedgerows and corn-fields at harvest time, and the rick-yards in the winter months." Mr. Stevenson says that it is resident and breeds in Norfolk, although apparently confined to certain districts, and nowhere plentiful; and Mr. Cordeaux states that it is resident and breeds in the Humber district. Large flocks, he adds, probably of migrants, visit East Lincolnshire in October, and leave again about the end of March. It is also found in Durham and Northumberland; and in Scotland, Mr. Robert Gray says, it was first recorded by Don from the mountains of Angusshire, and has since been met with in Caithness, Morayshire, and East Lothian. A few breed annually near North Berwick. On the east coast, he states, it cannot with certainty be included in the list of regular visitants; but he was informed by Mr. Duncan C. Brown that he had seen it at Arrochar, Loch Long. It has also been met with nesting near Ardrossan, in Ayrshire; and Mr. J. A. Harvie-Brown says that it was found breeding in Sutherlandshire in 1872 by Mr. T. Mackenzie, of Dornoch Castle. According to Thompson it does not occur in Ireland.

Captain Feilden, who met with the present species in the Færoes, writes as follows:—"Three years ago a few pairs of these birds made their appearance on the island of Skuoe; they probably found their way there from the rigging of some passing vessel; and finding that the

place agreed with them, they have become quite naturalized, and have already spread to the neighbouring island of Sandoe. The 'Spoarve' is not a favourite with the people of Skuoe; it has increased so much as to be a perfect pest, eating the seeds when sown in the little crofts, and damaging the gardens. The inhabitants wage unremitting war against them, robbing and destroying their nests. I noticed several pairs of them in the village of Skuoe on the 23rd May, 1872, and procured one nest, with four eggs, which was built in a chink of a wall. After shooting one specimen the rest became so wary that I was unable to procure another." In Scandinavia it is tolerably numerous. Mr. Collett says that it breeds not uncommonly in some parts of Norway, especially in the coastal districts, and is gradually spreading further into the country. It is common in Smaalehnene, the vicinity of the Christiania fiord, Nedenæs, and Stavanger. On the west coast it is rare near Bergen, but is found above the Arctic circle, at Ranen, and bred in 1865 on the Varanger fiord. In the interior it is periodically common in Land and Valders, and was met with by Mr. Hartman, in 1854, in flocks on the Dovre above the conifer-region. Nilsson says that it is common in Southern Sweden, and is found a full degree of latitude further north than the House-Sparrow. I never observed it in Finland, where, according to Von Wright (Finl. Fogl. p. 240), it is somewhat rare; and in Northern Russia, Sabanäeff says, it is as numerous in the towns of the Jaroslaf Government as the common Sparrow, but is rarer at Moscow. He met with it throughout the Ural range. Mr. J. A. Harvie-Brown, who has just visited North Russia with Mr. Seebohm, sends me the following note:—"We found the Tree-Sparrow common throughout the greater part of the north of Russia which we visited. From Vologda northward to Archangel it is abundant, especially in the country villages, where it appears to replace the common species entirely. It is much less abundant, however, in the larger towns, being supplanted by the other species. Curiously, however, it appears in summer to be quite rare in Archangel and in the villages of the delta of the Dvina; and in 1872 Alston and I failed to obtain or identify a single specimen, although we recognized and shot it at Kargopol. This year, in March, amongst the large flocks of Sparrows busily feeding on the dunghills and farmyards in the town of Archangel, the percentage of the Tree-Sparrow was very small indeed.

"Passing northward and eastward, the Tree-Sparrow continued to occur in some numbers, though they were not so abundant in April there as they were southward at Archangel during the previous month. As early as the 8th of April, at Kousonemskaia, some were seen carrying nesting-materials in their bills, though it was not until long after that they commencd nesting-operations at Ust Zylma. At the latter place at the time of our arrival (15th April) they were not nearly so abundant as they afterwards became. They gained accessions to their numbers and were very abundant before we left at the commencement of June. The common Sparrow, which was evidently rare, if not altogether absent, at the time of our arrival, also became common about the middle of May. At Haberiki (forty versts lower down the Petchora than Ust Zylma) no Tree- or other Sparrows were seen by us on the occasion of our first visit to that place in the end of April; but there was a flock of about a dozen frequenting the little village in the beginning of June. Cold winds and storms of sleet and snow at that time prevented them from beginning to nest; and they kept in one compact flock during the time we remained there (3rd, 4th, and 5th June).

"We started on our voyage down the river on the 9th of June. We met with the Tree-Sparrow at Chuvinski, on or close to the Arctic circle, and afterwards, later in the summer, commonly at Kuya, in about equal numbers with the common Sparrow; and we obtained one specimen as far north as Stanavoialachta, the old landing-port of the timber-trading company, in about 68½° N. lat." Throughout Northern Germany the Tree-Sparrow is found during the breeding-season, but is, Borggreve says, a partial migrant. It is not so common in the eastern as in the western portions of that territory. In Denmark it appears to be common; but Kjærbölling does not state if it is a true resident or partial migrant. Mr. Labouchere informs me that it is very common in the northern provinces of Holland, but not so numerous in the southern districts. It is also found in Belgium, and is, Messrs. Degland and Gerbe say, common and resident in many parts of Northern, Western, and Central France, but in the south it is merely a migrant. Lord Lilford informs me that he noticed great numbers of Tree-Sparrows alive and dead in the bird-market of Marseilles, in November 1874. Professor Barboza du Bocage includes it in his list of the birds of Portugal; and it is found in Spain, but must be rare, as Colonel Irby never saw it alive, though he was shown specimens obtained in Andalucia; and Mr. Howard Saunders only observed it on the banks of the Segura. In Italy it is, Salvadori states, found throughout the year, but in less numbers in the winter. Cara states that it is very rare in Sardinia; and Salvadori only saw the two specimens in the Museum at Cagliari, never meeting with it alive. Malherbe states that it is resident in Sicily, being somewhat rare near Messina, but numerous on the coast of Lentini, where rice and other cereals are extensively grown. Mr. C. A. Wright states (Ibis, 1864, p. 53) that he only knows of one specimen having been taken at Malta, many years ago. Lord Lilford observed a pair near Ptelia, in the Ionian Islands, in January 1857; and both Lindermayer and Von der Mühle state that it is a tolerably common resident in Greece; and Dr. Krüper speaks of it as being found on the plains near Olympus. In Southern Germany it is tolerably common, but nowhere so numerous as the House-Sparrow. It is found in the countries skirting the Danube; and I have a specimen from Turkey. It is stated to be common (according to Mr. Goebel more so than *Passer domesticus*) in some parts of the Uman district; and Dr. Radde speaks of thousands of this species frequenting the reeds in some parts of Southern Russia. It is not recorded from the Caucasus by Ménétriés; nor did Dr. Krüper meet with it in Asia Minor, or Canon Tristram in Palestine; but Von Heuglin says that it is found in Lower Egypt and Arabia Petræa, but he doubts if it is a resident. Loche says that it is found, though rarely, in Algeria; but it is not recorded by Favier as occurring in Tangier.

To the eastward the present species is found as far as Japan. De Filippi records it from Demavend, north-east of Tehran; but Messrs. Blanford and St. John did not meet with it in Persia. Dr. Henderson states ('Lahore to Yarkand,' p. 254) that it is the House-Sparrow of the city of Yarkand; and Mr. Hume adds the following note:—"This species is never met with, as far as my experience goes, in Kashmir or Ladák, Kulu, Spiti, Lahul, Garwhál, or Kumaon, or generally anywhere in the Himalayas west of Nipal; but at Darjeeling this is the common house-Sparrow during part of the year; and further east and south, in Assam, Tipperah, and Burmah it seems to be the only house-Sparrow." Dr. Jerdon states (B. of I. ii. p. 366) that it is "found in India only on the Himalayas, thence extending to the south-east throughout the

hill-ranges of Assam, and finally in Burmah, from Ramree in Arrakan and Upper Pegu, southwards to Singapore and Java." Captain Beavan states (Ibis, 1868, p. 174) that it is "common in Burmah, where the natives take great care of it. The outer husk of a cocoa-nut is cut in two and tied together again, with a small aperture left on one side for the entrance of the bird. Several of these thus prepared are hung under the eaves of the house, and sometimes inside the *quasi* rooms; and the birds breed in them. The object appears to be a purely religious one; the Burmese think that by thus taking care of these little birds they themselves in their next transmigration will, under the form of Sparrows, receive kindness in the same proportion that they now bestow it."

Northward the Tree-Sparrow is found far into Siberia. Severtzoff speaks of it as being common and resident throughout Turkestan. Von Middendorff met with it in the most out-of-the-way parts of Siberia, but never observed the common Sparrow. He was told of Sparrows being found at the settlements of Goroschinskoje and Argutskoje, on the Jenesei, which he believes to be the present species. Von Schrenck did not observe it on the Lower Amoor, but met with it first on the Sachali river; and Dr. Radde observed it in the summer in Transbaikalia, at Zagan-olui, and about 40 versts below Aigun. It was also found breeding on the shores and islands of the Amoor, about 120 versts above the mouth of the Bureja. Mr. Swinhoe states that it is the common house-Sparrow throughout all China, Hainan, and Formosa; and it is said to be common in Japan. I may also add that, according to Sir R. H. Schomburgk (Ibis, 1864, p. 256), it is common in Siam; and Dr. Cabanis states that it is found in Manilla.

In habits the present species has much in common with the common Sparrow, from which it also differs in many respects. It is even fonder of the society of others of its own species than that bird, but quite as quarrelsome, if not more so, and is a more active, lively bird, but scarcely so wary, though quite as impudent; for, not dwelling so much in the vicinity of human habitations, it has not the same experience of the ways of human kind. It breeds both near and in inhabited places, as well as in places at some distance from dwellings. It is more frequently seen on the ground than in trees, and hops with ease, like its ally *Passer domesticus*, which it also resembles on the wing, but is more agile and quicker in its flight, turning sharper and with more ease. Its note resembles that of the common Sparrow, but is softer and more agreeable, and may easily be distinguished by a practised ear; it is also a less noisy bird than that species. It feeds in the summer season chiefly on insects of various kinds, and is a bird that well deserves protection, because of the numerous destructive insects it devours. It feeds its young on caterpillars and various kinds of insects, and is therefore a bird which is beneficial to a garden; for it clears the buds and foliage of the fruit-trees of numbers of noxious insect pests. Later in the season it feeds on seeds of various kinds, these forming its food during the winter season. Amongst others it is fond of the seeds of *Urtica dioica*, *Chenopodium album*, and *Polygonum aviculare*, all three of which are weeds of the most noxious kind.

The Tree-Sparrow selects for the purposes of nidification the hollow of a tree in preference to an inhabited dwelling-house. It usually builds in an old hollow tree, in a hole in an old pollard willow, less frequently in a cleft of the rock or in an old wall; and with us in Europe, at least, it does not seem to care to build in a house. On the other hand, in Eastern Asia the present species is said to take the place of the House-Sparrow, and to frequent inhabited

houses, building its nest like that of *P. domesticus*. Its nest is constructed of straw, hay, roots, wool, hair, and feathers, and is a somewhat slovenly structure. The interior cup, in which the eggs are deposited, is carefully and thickly lined with feathers, which form a soft bed for the eggs. The nesting-place is selected as early as February; and eggs are deposited sometimes as early as the end of March or beginning of April. The old birds raise three broods in the season; but the younger ones only one, or at most two. Both male and female incubate in turn for thirteen or fourteen days; and when the young are hatched they are most carefully tended and fed by both parents until able to seek for food by themselves.

Judging from those I have collected, the eggs of the present species run much darker and are smaller than those of the common House-Sparrow. The ground-colour is dull white, and the markings are dark wood-brown, or brown with an umber tinge; but these latter are generally so profuse as to almost hide the ground-colour altogether, though here and there one finds an egg less closely marked and showing the ground-colour, and one or two have a faint greyish tinge. In size those in my collection vary from $\frac{29}{40}$ by $\frac{21}{40}$ to $\frac{30}{40}$ by $\frac{24}{40}$ inch. The number of eggs deposited varies not a little. Old females lay as many as six or seven in the first clutch, and less in the second and third; whereas young females lay four or five, seldom or never more than the latter number. The young birds when able to forage for themselves collect together, often forming large flocks, and are only joined by their parents when these latter have brought out their last brood, when all rove about the country in search of food. In most parts of the Continent a partial migration appears to take place, though in many parts this bird is a resident. With us in Great Britain it also appears to be a partial, if not a regular, migrant. Mr. Blyth, in Rennie's 'Field Naturalist' (i. p. 467) states that a vessel coming from Aberdeen to London was, when off the Norfolk and Suffolk coasts, visited by large numbers of Tree-Sparrows which appeared to be on passage; and Mr. E. Hearle Rodd gives an instance of a Norwegian brig being visited by thousands of the present species when midway between Norway and England.

The specimens figured are the adult male and female above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

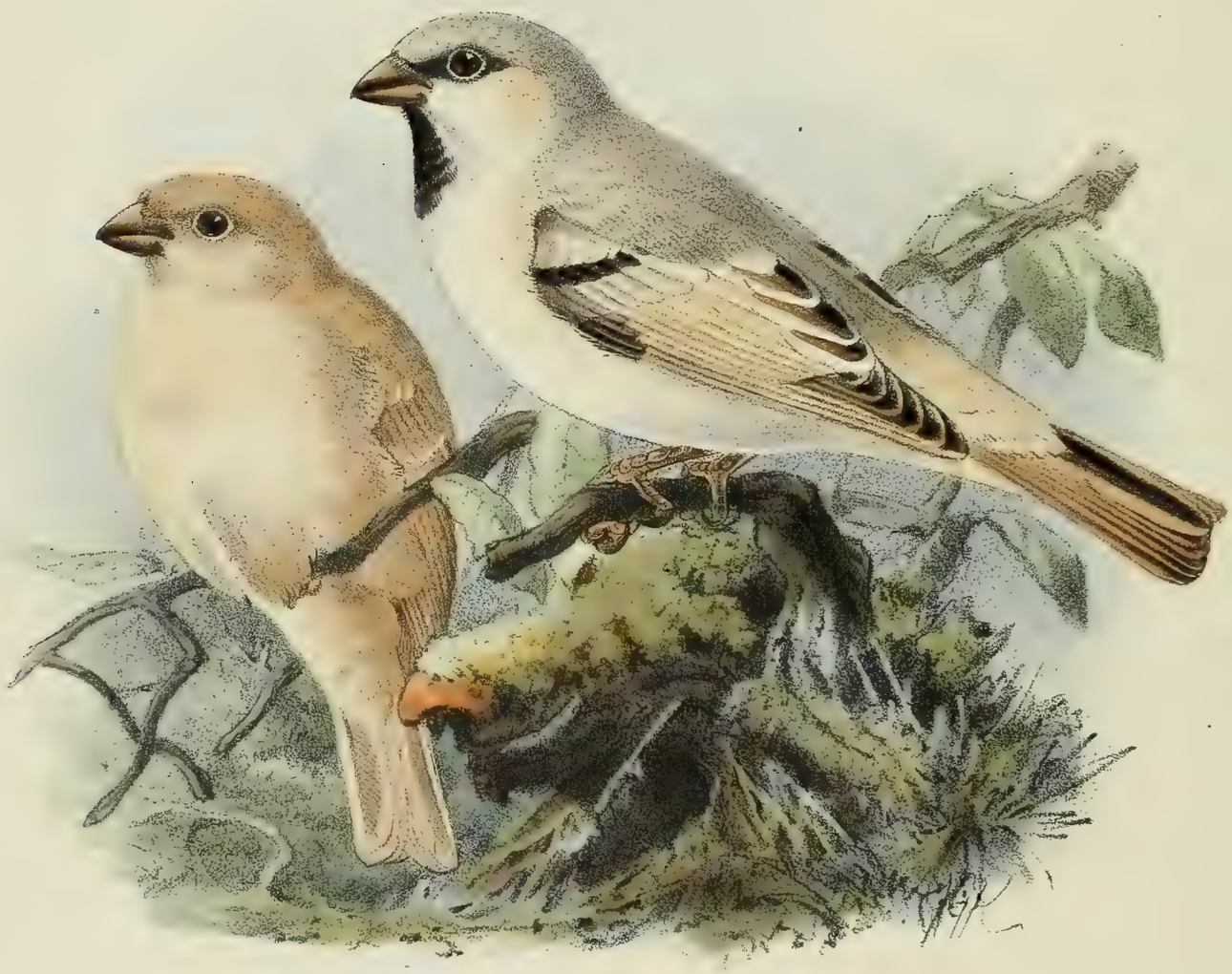
a, ♀. Farnborough, Kent (*H. E. D.*). *b*. Hampstead, November 11th, 1869 (*Davy*). *c*, ♂. Hareskov, Denmark, January 6th. *d*. Hareskov, February 15th, 1872 (*A. Benzon*). *e*, ♀. Piedmont, March. *f*, ♂. Piedmont, April 1870 (*Salvadori*). *g*, ♂. Bujukdere valley, Turkey, October 18th, 1870 (*Robson*). *h*, ♀. Amoy, China (*R. Swinhoe*). *i*, *k*. Nagasaki, Japan (*Whitely*). *l*. Yokohama, Japan, February 21st, 1870 (*Captain Conrad*).

E Mus. R. Swinhoe.

a, ♂, *b*, ♂. Amoy, April 1861. *c*, ♀, *d*, ♂, *e*, ♂. Takow, January 1869. *f*, ♂. Canton, April 1860. *g*. Peking, July 1860. *h*. Peking, October 1860. *i*. Peking, July 1868 (*R. S.*).

E Mus. Howard Saunders.

a, ♂. Ping, Valencia, October 17th. *b*, ♂. Silla, Valencia, November. *c*, ♀. Malaga, November 1st. *d*, ♂. Sicily (*Doderlein*). *e*, ♂. France, May.



ALGERIAN DESERT SPARROW
PASSER SIMPLEX

PASSER SIMPLEX.

(DESERT-SPARROW.)

Fringilla simplex, Licht. Verz. Doubl. p. 24 (1823).
Loxia simplex, Licht. fide Less. Traité d'Orn. p. 439 (1831).
Pyrgita simplex (Licht.), Lesson, Traité d'Orn. p. 439 (1831).
Passer simplex, Bp. Consp. Gen. Av. i. p. 511 (1850).
Corospiza simplex (Licht.), Bp. Consp. Gen. Av. i. p. 511 (1850).
Passer lichtensteinii, Heug. Journ. für Orn. 1868, p. 88.
Corospiza lichtensteinii (Heug.), G. R. Gray, Hand-l. ii. p. 87 (1870).

Figuræ unicæ.

Temm. Pl. Col. 358. fig. 1 (♂), fig. 2 (♀).

♂ *ad. ptil. hiem.* pileo cinereo vix isabellino tincto, dorso isabellino-cinereo, uropygio et supracaudalibus pallidè isabellinis: remigibus et rectricibus dilutè fumosis, versus apicem nigricantibus et isabellino-albido marginatis: tectricibus alarum minoribus isabellino-albidis, majoribus nigricantibus albido terminatis: primariorum tectricibus fuscescenti-nigricantibus: loris, gulâ guttureque medio circumscriptè nigris: colli lateribus albis: corpore subtùs isabellino-albido: rostro fusco, ad basin albido: iride fuscâ: pedibus pallidè flavo-corneis.

♀ *ad.* vix minor, gulâ et loris isabellino-albidis nec nigris, suprà isabellina nec griseo tincta.

Adult Male (Hadjiri, Algeria). Crown delicate grey with an isabelline tinge; back isabelline grey; quills brownish grey, becoming blackish towards the tips, and finally terminated with creamy white; secondaries isabelline on the outer web; lesser wing-coverts white, larger coverts blackish, broadly terminated with isabelline; primary coverts blackish; tail sooty brownish, darker towards the tip, all of the feathers margined with isabelline; upper tail-coverts creamy white; lores and upper throat black; underparts white with an isabelline tinge; sides of the neck pure white; bill whitish at the base, otherwise brown; iris dark brown; legs dull yellowish horn. Total length about 5·5 inches, culmen 0·4, wing 3·1, tail 2·5, tarsus 0·85.

Adult Female. Differs from the male in having the upper parts warm isabelline, not grey, in lacking the black on the throat and lores; and the sides of the neck are isabelline, and not pure white. Total length about 5 inches, culmen 0·4, wing 2·95, tail 2·4, tarsus 0·83.

Obs. The above descriptions are taken from specimens in winter dress; but the summer plumage does not appear to differ: the bill, however, according to Von Heuglin, is black, and not brown, in the summer.

When making out the list of the species which occur on the extreme southern and south-eastern limits of the Western Palæarctic Region I experienced some difficulty in deciding where the line should be drawn, and was inclined to exclude a few desert forms, the present species amongst the number; but on discussing matters with the Rev. Canon Tristram, whose personal experience as a field-naturalist in Algeria is very extensive, he strongly recommended me to

include all such as are merely desert forms and otherwise closely assimilate to allied true Palæarctic species. I have therefore decided to include these desert forms, especially as they are but few in number, and will but slightly increase the number of species of which I have to treat.

The Desert-Sparrow is an inhabitant of the true desert, and is only to be met with in Algeria in the southern districts, according to Loche in the M'zab country; and the specimen obtained by him, and deposited in the zoological collection at Algiers, was procured at Gardheia. Loche states that Canon Tristram searched for it in vain when in Algeria in 1857, and that it was not known to inhabit that country until he obtained it in the oasis of M'zab in 1856; but Canon Tristram writes (Ibis, 1859, p. 294) as follows:—"This Sparrow was first ascertained to be a resident in the Sahara in the winter of 1856, when I obtained several examples in the oasis of Hadjira. Captain Loche has since found it in the Wed M'zab."

In North-east Africa the Desert-Sparrow has but a restricted range. It was first described by Lichtenstein from Nubia; and Von Heuglin says (Orn. N.O.-Afr. p. 636) that he only observed it in the deserts of Southern Nubia, throughout the whole Bajuda, in Northern Kordofan and Sennaar, and in the desert between Berber and Sauakin, but in the latter locality it was not found in mountainous districts.

As might be supposed, the Desert-Sparrow resembles the Tree-Sparrow in its general habits. Von Heuglin writes (*l. c.*) that, like *Passer montanus*, it is found in pairs or small flocks, feeds chiefly on seeds, is frequently seen about the stations where the caravans halt, and its flight and note closely resemble those of *P. montanus*; and Canon Tristram writes (*l. c.*) as follows respecting its habits, viz.:—"It is a rare bird in all its localities, living in little companies of five or six together in the outskirts of the palm-groves, among the stunted and sand-choked date-palms, and never, according to our observation, venturing into the cultivated portions of the oases. It is scarcely necessary to add that it is confined to the most southern limits of the Algerian Sahara. It is shy and silent, and hops from leaf to leaf more like a *Sylvia* than a Sparrow, running along the ground from tree to tree, and then skulking in the heart of the date-buds, where it probably finds its insect food. . . . I never found the Desert-Sparrow in the open country, nor indeed more than a few yards from a tree; and I observed its habits the more carefully for several days, as I fully believed it to be a new species."

Loche says that it breeds on the palms, and that its nest is constructed of rootlets, fine bents, hair, and feathers, and that its eggs, four in number, are white with a bluish tinge, sparingly spotted with grey and brown, these spots frequently forming a wreath round the larger end. Unfortunately I have not been able to obtain the nest or eggs of this bird for description, and can therefore only translate Loche's description.

The specimens figured and described are an adult male in the collection of Canon Tristram, and an adult female in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Hadjira, Algeria, December 22nd, 1856 (*H. B. Tristram*).

E Mus. H. B. Tristram.

a, ♂. Hadjira, Algeria, December 23rd, 1856. *b*, ♀. Hadjira, December 22nd, 1856 (*H. B. T.*).

Genus PETRONIA.

Passer apud Brisson, Orn. iii. p. 87 (1760).
Fringilla apud Linnæus, Syst. Nat. i. p. 322 (1766).
Coccothraustes apud Cuvier, Règne Anim. i. p. 413 (1829).
Petronia, Kaup, Natürl. Syst. p. 158 (1829).
Pyrgita apud Brehm, Vög. Deutschl. p. 263 (1831).
Carpospiza apud Von Müller, J. f. O. 1854, p. 445.
Euplectes apud Heuglin, Syst. Uebers. p. 39 (1856).

In the genus *Petronia* are grouped several species of Sparrows which in general coloration, and to a large extent in habits, differ so far from *Passer domesticus* and its congeners to warrant their being placed in a separate genus. These birds inhabit the Palæarctic, Ethiopian, and northern portions of the Oriental Regions, two species only being found in the Western Palæarctic Region.

In habits the Rock-Sparrows differ from the true Sparrows in affecting rocky places, and being, as a rule, less frequently seen on cultivated ground. They feed on seeds, insects, and fruits, are swift on the wing, and active and sprightly in their movements. Their call-note is harsh; and their song, if song it can be called, is poor, and wanting in melody. They build a bulky and carelessly constructed nest like that of the common Sparrow, which they place in holes in rocks, walls, and trees, and deposit eggs which closely resemble those of the true Sparrows; but one species (*Petronia brachydactyla*) differs in building a compact nest and laying white eggs spotted with black.

Petronia stulta, the type of the genus, has the bill conical, stout, straight, rather short, about as broad as high at the base, compressed towards the tip, which is acute; nostrils small, basal, concealed by recurved feathers; wings long, pointed, the first quill longest; tail short, nearly even; legs and feet moderately strong, the tarsus covered in front with four large and three inferior scutellæ, claws rather short, slightly curved, laterally grooved, acute; plumage much duller in colour than in *Passer*, and the black on the throat of the male of *Passer* is entirely wanting in this genus.



J.G.Keulemans lith.

M&N.Hanhart imp

1. DESERT ROCK-SPARROW.
PETRONIA BRACHYDACTYLA.
2. ROCK-SPARROW.
PETRONIA STULTA.

PETRONIA STULTA.

(ROCK-SPARROW.)

Passer stultus, Briss. Orn. iii. p. 87 (1760).
Passer silvestris, Briss. tom. cit. p. 88 (1760).
Passer bononensis, Briss. tom. cit. p. 91 (1760).
Fringilla petronia, Linn. Syst. Nat. i. p. 322 (1766).
La Soulcie, Buff. Hist. Nat. Ois. iii. p. 498 (1775).
Fringilla stulta, Gmel. Syst. Nat. i. p. 919 (1788, ex Briss.).
Fringilla bononiensis, Gmel. Syst. Nat. i. p. 919 (1788, ex Briss.).
Passer petronia (Linn.), Koch, Baier. Zool. i. p. 220 (1816).
Coccothraustes petronia (Linn.), Cuv. Règne Anim. i. p. 413 (1829).
Petronia, Kaup (*Fringilla petronia*, Linn.), Natürl. Syst. p. 158 (1829).
Pyrgita petronia (Linn.), C. L. Brehm, Vög. Deutschl. p. 263 (1831).
Pyrgita rupestris, C. L. Brehm, op. cit. p. 264 (1831).
Petronia rupestris (Br.), Bp. Comp. List, p. 30 (1838).
Petronia stulta (Gmel.), Blyth, J. As. Soc. Beng. xvi. p. 880 (1847).
Petronia saxorum, C. L. Brehm, Vogelfang, p. 97 (1853).
Petronia brachyrhynchos, C. L. Brehm, ut suprà (1855).
Petronia macrorhynchos, C. L. Brehm, ut suprà (1855).
Petronia brevirostris, Taczanowski, J. f. O. 1874, p. 323.

Moineau fou, *Soulcie*, French; *Pardal françez*, Portuguese; *Gorrion montes*, Spanish; *Passera lagia*, Italian; *Steinsperling*, *Bergsperling*, German; *Rotmusch*, Dutch.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 225; Werner, Atlas, *Granivores*, pl. 37; Naumann, Vög. Deutschl. taf. 116. figs. 3, 4; Gould, B. of Eur. pl. 186; Schlegel, Vog. Nederl. pl. 163.

♂ *ad.* pileo centraliter griseo-fusco et pilei lateribus saturatè fuscis, regione oculari et striâ magnâ ad nucham ductâ pallidè cervinis, capitis lateribus saturatè fuscis: corpore suprà sordidè arenaceo-fusco, albido et nigro-fusco notato et guttato, uropygio fere immaculato: remigibus saturatè fuscis, albo-cervino marginatis, secundariis eodem colore apicatis: tectricibus alarum saturatè fuscis, albo-cervino marginatis et terminatis: rectricibus saturatè fuscis, angustè cervino marginatis, centralibus versus apicem inconspicuè albo notatis, et reliquis vittâ magnâ apicali albâ notatis: corpore subtùs cervino-albo, irregulariter pallidè griseo-fusco striato: gulâ vittâ magnâ flavâ notatâ: subcaudalibus sordidè fuscis, conspicuè albo terminatis: rostro fusco-corneo, mandibulâ ad basin pallidè fuscâ: pedibus pallidè fuscis: iride fuscâ.

♀ *ad.* mari similis sed sordidior et gulâ haud, vel inconspicuè flavo notatâ.

Juv. feminæ similis sed pallidior, gulâ et corpore subtùs fere omnino albis, vittâ gulari flavâ nullâ.

Adult Male (Seville, Spain, June). Crown dark brown, a broad streak through the centre to the nape, where it widens considerably, dusty greyish brown; a broad pale buff streak passes from the eye to the nape, below which the sides of the head are dark brown; upper parts dusty wood-brown spotted and blotched with buffy white and deep brown, the rump, however, being almost uniform in colour; quills dark brown margined with buffy white, the secondaries tipped with that colour; wing-coverts dark brown margined and tipped with buffy white; tail dark brown, the feathers being narrowly margined with buff, and all having a large terminal white spot, this spot being but slight on the central rectrices, but strongly developed on the lateral ones; underparts buffy white, irregularly striped with pale brown; on the centre of the throat is a clear yellow spot; under tail-coverts dull brown broadly tipped with white; bill horn-brown, the basal portion of the lower mandible light brown; legs light brown; iris brown. Total length about 5·75 inches, culmen 0·5, wing 3·6, tail 2·15, tarsus 0·75.

Adult Female (S. Persia, June). Resembles the male, but is duller in colour, less clearly marked, and the yellow spot on the throat is wanting or is but slightly defined.

Adult Male in winter (Corsica, 22nd December). Resembles the male above described; but in general coloration the plumage is darker.

Young (Attica, 11th July). Resembles the female, but is rather lighter in colour, and the underparts especially are whiter.

The Rock-Sparrow inhabits Central and Southern Europe, North Africa, and in Asia as far east as Eastern Siberia, being in most parts a resident. It does not occur in Great Britain, Scandinavia, or North Russia, and is of uncommon occurrence in Germany. According to Borggreve, it appears doubtful if it occurs regularly in North Germany, for later records respecting its occurrence there are wanting; but Boeck states that he received it from Thuringia; Schäfer says that it is a rare migrant in the Moselle district; Naumann writes that it occurs in the valley of the Saale and the Rheingau; and, according to Saxesen, it has once been obtained in the Harz Mountains. Professor Schlegel says that it has been once obtained in North Brabant, and once at Harderwijk; but it is not recorded from Belgium. Messrs. Degland and Gerbe say that it is of rare occurrence on passage in the north of France and in Lorraine, but is occasionally met with near Paris, and a female was captured near Lille in October 1839. In the south of France it is common, and is resident in Anjou, the Hautes Pyrénées, the Basses Alpes, and Var. According to M. A. Lacroix it is found during the summer in the wooded portions of the mountains of the French Pyrenees, where it breeds; and in winter it descends to the plains, and is then found near Toulouse, where it is occasionally found intermixed with flocks of other Finches. In March it leaves singly for its breeding-haunts. Professor Barboza du Bocage records it as being rare in Portugal; and Mr. Howard Saunders says that in Spain it is very local, but not rare. I met with it near Barcelona; and Colonel Irby writes (Orn. Str. Gibr. p. 120) that it is common in Southern Spain, in the sierras and rocky ground, nesting in May in holes of rocks. According to Salvadori it is found throughout Italy, and is resident and breeds in Sicily. Lord Lilford found it very common at Syracuse; and Mr. A. B. Brooke says that in Sardinia it is a summer visitant, arriving in considerable numbers about the middle of April, immediately resorting to the orchards and gardens round the towns; but he never saw them in the mountains, and none remain during the winter. It occurs, however, in Corsica, in winter; for Mr. C. Bygrave Wharton writes (Ibis, 1876,

p. 25), "for about a week at the end of December there were several of these birds in the immediate neighbourhood of Ajaccio; but I never saw them afterwards. On the 28th I shot two out of one of my windows; and all the time they stayed with us they were exceptionally tame." It occurs also rarely in Malta. Lord Lilford mentions (Ibis, 1860, p. 137) that he observed several Rock-Sparrows in the Acroceraunian Mountains in May 1857, and in Montenegro in August of the same year; and Dr. Krüper says that in some parts of Greece, as, for instance, in Attica and the Parnassus, it is common, but rare in Acarnania. Inside the walls of Salonica, in Macedonia, he found it common. In Attica it breeds twice in the year, late in April and in June; but in the mountains it only nests once, late in May, at which time Dr. Krüper found a clutch of seven fresh eggs in the Parnassus. In July and August he saw flocks of hundreds of individuals in the elevated plains of the Parnassus. It is said to be not uncommon near Constantinople; and Von Nordmann says that it occurs in the mountain districts south of the Black Sea. Ménétriés found it in the rocks skirting the Caspian, between Bakou and Kouby; and Dr. Krüper says that he saw large flocks near Smyrna in the winter, but scarcely ever met with it during the summer season; and Mr. Danford met with it in Adalia. Canon Tristram says that it is never found in Palestine in winter, but reappears in the early spring, late in March, and immediately begins to select its nest-holes; it is very widely distributed, but only in the open rocky country. He never observed it either on the coast-plains or in the Jordan valley, while along the central ridge of Western Palestine it was very common. I do not find it recorded from North-eastern Africa; but it occurs in Algeria. Mr. Taczanowski met with it at the Tell amongst rocks and near houses, but nowhere numerous. Neither Mr. C. F. Tyrwhitt-Drake nor Favier mention having seen it in Morocco. According to Dr. Carl Bolle it is said to occur on all the Canary islands, but is, he thinks, most common on Madeira, where it takes the place of the House-Sparrow; but Mr. Godman (Ibis, 1872, p. 210) speaks of it as being exceedingly abundant near the coast and about cultivated lands and gardens. It even frequents the towns, but breeds in societies in holes in cliffs. He considers that it is more common in the Canaries than in Madeira.

To the eastward the present species is found as far as North China, but it appears to be very local in its distribution. Dr. Severtzoff says that it breeds in Turkestan; and it was found in Persia by Mr. Blanford and Major St. John. Mr. Blanford states (E. Pers. ii. p. 255) that he did not meet with the present species east of Shiraz, but in the mountains between Shiraz and Isfahan it was common, and also in the Elburz, north of Tehrán, keeping much to barren and rocky parts of the hills at a considerable elevation, and being usually seen in small flocks. It has not been recorded from India; but Dr. Radde, who met with it in Eastern Siberia, writes as follows:—"I was not a little astonished to find near the frontier post of Kulussutajefsk, on the 28th August, in the bare steppe, a flock of fifteen to twenty individuals of this species, out of which I shot a pair." It is not mentioned by any other of the Siberian travellers; but Père David says that it is found and breeds in the Ordo Mountains, north-west of Pekin. Colonel Prjevalsky, who met with it in Mongolia, writes as follows:—"The specimens we obtained differed from European examples by their conspicuously paler coloration and shorter bill; but the latter is subject to great variation, and specimens from the Caspian in the St.-Petersburg Museum are intermediate between the East-Asiatic and European forms. In Mongolia this

species is tolerably common, especially in the mountain-valleys, the monotony of these localities being broken only by the chattering call-note of the Rock-Sparrow. It usually breeds in steep earth-banks, and occasionally also in rocks. In the former places the nest is placed in a hole, usually so near the face of the bank that the eggs or young are visible. The young, from four to six in number, are hatched late in May. In winter the present species collects in large flocks, often numbering several hundred examples; and such flocks were repeatedly seen by us in Muni-ul flying to their drinking-places. In Kan-su it is exceedingly common; at Koko-nor it is not so frequently observed, and is only of occasional occurrence in Northern Thibet. At Halka it is also numerous, especially on the low mountain-range in the Gobi desert."

In habits the present species much resembles the common House-Sparrow; but it is scarcely so bold as that bird; nor does it affect the vicinity of human habitations, being more frequently found away from the villages and farm-yards, in rocky places, and seldom on the cultivated plains. It feeds on cereals of various sorts, seeds of wild plants, grasses, &c. during the autumn and winter, and is not unfrequently seen on the roads searching amongst the horse-droppings for the undigested grains; and it also feeds on berries of various kinds. During the spring and summer it feeds on insects, caterpillars, and larvæ, coleoptera of various kinds, small grasshoppers, &c. &c., and feeds its young on these; and when the fruit is ripe it devours various kinds of garden-fruit, especially cherries, with avidity. It is active in its movements on the ground, more so than the other Sparrows, and is swift on the wing, its flight somewhat resembling that of the Crossbill. Its call-note is harsh, resembling, Naumann says, that of the Brambling; but Brehm compares it to the word *ziwit*; and during the breeding-season the male utters a sort of song, which, however, is but poor and has but small claim to melody. In confinement it is said to become very tame, and soon learns to copy the notes of other birds near it.

It nests, like the House-Sparrow, in holes in the rocks and old walls or hollow trees, making a somewhat bulky and carelessly constructed nest of straw, grass-bents, fine roots, wool, hair, and bits of rag, &c., lined with an abundance of feathers; and, so far as I can ascertain, it only has one brood in the season, the eggs being deposited in May or June. These, from four to seven in number, resemble the eggs of the common Sparrow so closely that they cannot with certainty be distinguished; but, as a rule, they are rather larger, and, judging from the series in my collection, dark varieties of the egg of the Rock-Sparrow are more numerous than in a series of those of the common Sparrow.

The specimen figured, on the same Plate with *Petronia brachydactyla*, is the adult male above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Seville, Spain, February 18th, 1871 (*Colonel Irby*). *b*, ♂. Seville, June (*Irby*). *c*, ♂. Barcelona, Spain, March 3rd, 1866 (*H. E. Dresser*). *d*, ♂. Ajaccio, Corsica, December 22nd, 1874 (*C. B. Wharton*). *e*, *juv.*, *f*, *juv.*, *g*, *juv.* Attica, July 1st, 9th, and 11th, 1867 (*Dr. Krüper*). *h*, ♀. Mayin, N. of Shiraz, S. Persia, June 24th, 1872 (*W. T. Blanford*). *i*, ♂. Castelcorizo, Asia Minor, December 14th, 1874 (*C. G. Danford*). *j*, ♂. Bereketli, Asia Minor, April 29th, 1876 (*C. G. Danford*).

PETRONIA BRACHYDACTYLA.

(DESERT ROCK-SPARROW.)

Petronia brachydactyla, Bp. Consp. Gen. Av. i. p. 513 (1850).
Fringilla brachydactyla, Hempr. in Mus. Berol. fide Bp. ut suprà (1850).
Pyrenestes?, Gray, *Carpodacus*, Bp., *lacteus*, v. Müll. Naumannia, 1851, iv. p. 29.
Carpospiza longipennis, v. Müll. Beitr. Orn. Afr. taf. 10, J. f. Orn. 1854, p. 445.
Carpospiza brachydactyla (Bp.), Cab. J. f. Orn. 1854, p. 446.
Euplectes? *griseus*, Heugl. Syst. Uebers. p. 39. no. 386 (1856).

Figura unica.

Ibis, 1868, pl. vi.

♂ *ad.* corpore suprà fusco-arenaceo, pileo saturatiore: striâ superciliari indistinctâ: remigibus fuscis, pallidè isabellino apicatis, primariis augustè et secundariis latiùs rufescente cervino marginatis: tectricibus alarum sordidè fuscis, pallidè isabellino terminatis: caudâ saturatè fuscâ, rectricibus omnibus, centralibus exceptis, in pogonio interno ad apicem pallidè isabellino notatis et rectricibus duabus externis in pogonio externo isabellino-albidis: corpore subtùs albo, gutture, pectore et hypochondriis isabellino-cervino lavatis: subcaudalibus sordidè fuscescentibus, conspicuè albo marginatis: rostro fusco-corneo, mandibulâ albidâ: iride fuscâ: pedibus sordidè flavidis.

♀ *ad.* haud a mari distinguenda.

Adult Male (S. Persia, June). Upper parts sandy isabelline-brown, the crown rather darker; above the eye passes an indistinct superciliary stripe; quills brown, tipped with creamy white, the primaries narrowly and the secondaries more broadly margined with rufous buff; wing-coverts dull brown, margined with creamy white; tail dark brown, all, except the central feathers, with a terminal creamy white patch on the inner web, the outermost feather on each side with the outer web creamy white; underparts white; the throat, breast, and flanks washed with creamy buff; under tail-coverts dull brown, broadly margined with white; under mandible fleshy white; upper mandible horn-brown; iris dark brown; legs dull yellowish. Total length about 4·75–5 inches, culmen 0·4, wing 3·5, tail 1·85, tarsus 0·75.

Adult Female. Resembles the male.

The range of this small, somewhat aberrant species of Rock-Sparrow is rather limited; for it is only met with in Palestine, North-east Africa, and Persia. First discovered by Hemprich and Ehrenberg in Arabia, it was determined by them to be a distinct species, and labelled *Fringilla brachydactyla*; but no description was published, and the name remained merely a museum name until 1850, when Bonaparte included it in his 'Conspectus.' Canon Tristram met with it in Palestine, and obtained its eggs near Damascus and near Zebdany. "One day," he writes (Ibis, 1868, p. 205), "when we were encamped near Kulat-esh-Shukif, I was returning from a long

tramp on the flat plain of Upper Galilee, without a solitary Partridge for supper in my bag, or any thing more choice for the scalpel than a few Rock-Sparrows, Short-toed Larks, and Tawny Pipits, when I espied what looked like a hen Sparrow dusting itself in the mule-path in front of me, uttering meanwhile a most Sparrow-like chirp. I was near our tent; and by way of discharging my gun, I fired at it. Seeing the white bar on its tail as it fell, I took it for a young *Petronia stulta*, but soon discovered my mistake. We afterwards procured several others, but only on the bare plateau north of Hermon and in Cœle Syria." As above stated Hemprich and Ehrenberg met with it in Arabia; and Von Heuglin says (Orn. N.O.-Afr. i. p. 625) that he found it in the coast districts of Abyssinia, not far from the Mareb, and again in Southern-eastern Kordofan. He observed it in these districts during and after the rainy season, from the end of August to November, but is unable to say if it is a resident or a migrant.

Eastward the present species is found into Persia, but does not extend into Turkestan or India.

According to Mr. Blanford (E. Pers. ii. p. 256) it is "common in many parts of the Persian plateau, apparently descending to lower elevations in the winter, and breeding in summer on plains with scattered low bushes from 5000 to 8000 feet. My attention was attracted to this bird by its singular note, which so exactly resembles that of a large cricket that it was some time before I could feel convinced that it really proceeded from a bird. At the time I first heard the note (the end of April) these Sparrows were frequently seen sitting on bushes in semidesert plains, and uttering their singular stridulation. I do not think this peculiarity has been before noticed in print; but Mr. Tristram tells us he observed it on his last visit to Palestine."

In habits the present species appears to assimilate somewhat to the Rock-Sparrow, but is much more of a desert-bird, frequenting the dry arid plains, where its peculiar grey sandy coloration renders it difficult to observe. Von Heuglin says (*l. c.*) that in North-east Africa it "frequents the vicinity of farm-yards, hedges, threshing-floors, and is to be seen on the roads and in stubble-fields, hillocks overgrown with high grass, and rocks, and in the autumn collects not unfrequently, like the Ortolan, in small flocks; it is shy, and keeps flying about, uttering a peculiar stridulating call-note, which sounds very Bunting-like. It feeds on the seeds of *Eleusine*, *Poa*, and *Cyperus*, and also on coleoptera. It moults in October; and fresh-moulted autumn birds have a smoky brown tinge in the plumage, whereas, when abraded, the feathers have the reddish or isabelline grey coloration of the desert sand."

Canon Tristram was fortunate enough to obtain the nest and eggs of this bird in Syria. One morning, he writes (Ibis, 1868, p. 205), "in riding across the arid plain of the Sahra, not far west of Damascus we came on a neat compact nest in a very low bush, not two feet from the ground, containing four white eggs with a few black spots, exactly like a diminutive Golden Oriole's (*Oriolus galbula*). Completely puzzled as to the ownership of this pretty little domestic establishment, we thought it worth while to dismount and conceal ourselves in the neighbourhood till the proprietor should return. Soon the hen bird, cautiously hopping among the scrub, resumed her place on the nest. After watching her for a little while, we put her off, and secured her, as well as the sitting of four hard-set eggs. A few days afterwards I took another similar nest of five eggs in a bush on the bare hillside near Zebdany. This style of egg, so strangely

aberrant from the character of the rest of the family, is analogous to the exceptional egg of the North-American *Melospiza lincolni*, which lays a pure white egg, while all its congeners have eggs in the familiar Sparrow style. But not only does the discovery of its nidification mark the distinct character of this desert-bird; its general form, and every thing except its coloration, seems to me to separate it very decidedly from the genus *Petronia*."

The specimen figured, on the same Plate with *Petronia stulta*, is the adult male from Persia above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Dehgirda, near Shiraz, S. Persia, June 29th, 1872 (*W. T. Blanford*). *b*, ♀. Shiraz (*Major St. John*).

Genus MONTIFRINGILLA.

Passer apud Brisson, Orn. iii. p. 162 (1760).
Fringilla apud Linnæus, Syst. Nat. i. p. 321 (1766).
Emberiza apud Scopoli, Ann. I. Hist. Nat. p. 146 (1769).
Plectrophanes apud Boie, Isis, 1822, p. 504.
Montifringilla, C. L. Brehm, Isis, 1828, p. 1278.
Chionospina apud Kaup, Natürl. Syst. p. 139 (1829).
Orites apud Keyserling & Blasius, Wirbelth. Eur. p. 42 (1840).
Geospiza apud Gloger, Gemeinn. Handb. Naturg. p. 254 (1842).
Chionospiza apud G. R. Gray, Gen. of B. ii. p. 370, footnote (1849).
Leucosticte apud Des Murs, fide Degland & Gerbe, Orn. Eur. i. p. 277 (1867).

In many respects the Snow-Finches stand alone, and form a connecting link between the Sparrows and the true Finches, though many authors differ as regards the position to be assigned to this genus. For instance, Keyserling & Blasius place it between *Fringilla* and *Coccothraustes*, Degland and Gerbe between *Fringilla* and *Carduelis*, Sundevall between *Linota* and *Coccothraustes*, and G. R. Gray between *Petronia* and *Passer*. The Snow-Finches inhabit the mountain-ranges of the southern portions of the Palæarctic Region and the northern part of the Oriental Region, and are essentially alpine birds, frequenting the higher mountain-ranges during the summer and descending into the lowlands only during the winter. Only one species, *Montifringilla nivalis*, inhabits the Western Palæarctic Region; and full particulars respecting its habits are given in the article on that species.

Montifringilla nivalis, the type of the genus, has the bill moderately long, conical, straight, stout at the base, and tapering gradually to a sharp point; nostrils basal, slightly covered by stiff feathers directed forwards; gape without bristles; wings rather long, pointed, the first three quills nearly equal, the second being longest; tail rather long, nearly even; feet and legs stout, the tarsus covered in front with four large and three inferior scutellæ; claws strong, curved, laterally grooved, the hind toe and claw large and strong, the latter but slightly curved.



ALPINE SNOWFINCH.
MONTIFRINGILLA NIVALIS.

MONTIFRINGILLA NIVALIS.

(SNOW-FINCH.)

Passer fringilla nivalis, Briss. Orn. iii. p. 162, pl. xv. fig. 1 (1760).
Fringilla nivalis, Linn. Syst. Nat. i. p. 321 (1766, ex Briss.).
Emberiza nivalis (L.), Scop. Ann. I. Hist. Nat. p. 146 (1769).
Pinson de neige ou la Niverolle, Montb. Hist. Nat. Ois. iv. p. 137 (1778).
Fringilla saxatilis, Koch, Baier. Zool. i. p. 216 (1816).
Plectrophanes fringilloides, Boie, Isis, 1822, p. 504.
Montifringilla nivalis (L.), C. L. Brehm, Isis, 1828, p. 1278.
Montifringilla glacialis, C. L. Brehm, op. cit. p. 1278.
Chionospina, Kaup (*Fringilla nivalis*, Linn.), Natürl. Syst. p. 139 (1829).
Orites (*Fringilla*) *nivalis* (L.), Keys. & Blas. Wirbelth. Eur. p. 42 (1840).
Geospiza, Gloger (*Fringilla nivalis*, L.), Gemeinn. Handb. Naturg. p. 254 (1842).
Leucosticte nivalis (L.), O. des Murs, Encyc. d'Hist. Nat. part 5, p. 297, fide Degl. & Gerbe, Orn. Eur. i. p. 277 (1867).

Niverolle, *Pinson des neiges*, French; *Fringuello alpino*, Italian; *Schneefink*, German.

Figuræ notabiles.

Werner, Atlas, *Granivores*, pl. 44 *a*; Fritsch, Vög. Eur. taf. 24. fig. 13; Naumann, Vög. Deutschl. taf. 117; Roux, Orn. Prov. pl. 89.

♂ *ad. ptil. æst.* pileo et nuchâ saturatè cinereis, pilei plumis centraliter saturatioribus: capitis et colli lateribus pallidè cinereis: dorso scapularibus et secundariis intimis fuscis vix fulvido tinctis, plumis centraliter saturatè fuscis: remigibus primariis et alulâ spuriâ nigricantibus, illis albo apicatis, secundariis et tectricibus alarum albis, illis ad basin nigricantibus: rectricibus centralibus nigro-fuscis in parte apicali albido marginatis, reliquis albis nigro-fusco apicatis: corpore subtùs albo, gulâ et gutture centraliter saturatè nigris: rostro et pedibus nigris: iride fuscâ.

♀ *ad.* mari similis, sed gulâ et gutture minus nigris, capite vix sordidiore et corpore subtùs sordidè albido.

Ptil. hiem. corpore suprà vix pallidiore, subtùs sordidè albido, gulæ et gutturis plumis nigris albo marginatis, rostro flavo.

Adult Male in summer (Switzerland). Crown and nape clear dark ashy grey, the centres of the feathers on the crown rather darker, sides of the head and neck paler; back and scapulars brown with a slight fulvous tinge, the centres of the feathers darker; rump darker, the upper tail-coverts blackish brown; primaries blackish tipped with white; secondaries pure white, except the innermost, which are like the back; but the basal portion of the secondaries is blackish; wing-coverts white, except the spurious wing, which is partly blackish brown; underparts white, except the whole centre of the throat from the chin downwards, which is deep black; central rectrices blackish, on the terminal portion narrowly

edged with white, rest of the tail white, all except the outer feathers tipped with black; bill and legs black; iris brown. Total length about 7·75 inches, culmen 0·55, wing 4·55, tail 3·05, tarsus 0·95.

Adult Female. Differs from the male in having the ashy grey on the head less pure, the throat less marked with black, and the underparts rather dirty white.

Adult in winter (Switzerland, January). Crown and nape a trifle less clear grey than in the male above described, the back being also rather lighter; underparts a trifle dirty in tinge, and the black on the throat scarcely visible, the feathers having broad white margins; beak yellow with a slight dark mark at the base of the upper mandible.

Nestling (Switzerland). Has all the characteristics in plumage of the old bird; but the head is brownish ash, a few bits of down still remain on the crown, the back is uniform dull brown, and the underparts are tinged with buff; the wings and the short tail are marked almost as in the adult; bill yellowish; legs dull dark brown.

Restricted entirely to the more elevated mountain-ranges, stragglers only being met with on the plains during the winter season, the Snow-Finch has but a comparatively small range. It does not occur in the north of Europe, nor in the northern portions of Central Europe. Messrs. Degland and Gerbe state that it has been met with as an accidental straggler as far away from its mountain-haunts as the neighbourhood of Amiens; but otherwise it is restricted to the departments of the Hautes and Basses Alpes and to the Pyrenees. Messrs. Jaubert and Barthélemy-Lapommeraye state that it sometimes descends during the winter to the Bouches du Rhône and the banks of the Durance, but leaves as soon as the extreme rigour of the season abates. I do not find it recorded from Portugal; but it is found in Spain, and Colonel Irby states that he has seen specimens obtained in the Sierra Nevada, but never personally observed it. The Alps appear to be its true home; and there it is, in certain portions of the more elevated mountains, by no means uncommon. Bailly says (Orn. Sav. iii. p. 172) that it is resident in Switzerland and Savoy, being met with, during the better season of the year, only in the more elevated portions of the mountains, close to the eternal snows; and it is most frequently to be found on the St. Gothard, the Great St. Bernard, Mont Cenis, and in the limestone-regions of the Maurienne Alps. When the snow envelops the summits of the Alps the Snow-Finches descend into the lower regions, and are then seen near Chambéry. The snows of December and January drive annually a few flocks down to the rocky hills of Apremont, Saint Baldolph, Mont Basin, at the foot of the Nivolet, Vimines, Saint Sulpice, &c. &c. Schinz (Vög. der Schweiz, p. 76) says that it is a true alpine bird, frequenting the most elevated portions of the mountains. "Here," he writes, "they may be seen in the summer, flying about in small flocks, uttering a peculiar whistling note. We observed them on several occasions in the dreary and wild portions of the Gemmi pass. On the Grimsel and on the Simplon, at the hospices, we saw this species flying about and hopping on the ground, like our common Finches, in the winter; and in both places, as well as in the monastery of the Great St. Bernard, they nest in these buildings. In the monastery of the St. Bernard they fly in and out of the corridors, and are during the winter fed with seed, especially rice, which is thrown out to them; and they pick the rice out of the sacks when left in the corridors. In the summer they feed also on insects; and Sprüngle found the stomach of one filled with the remains of small beetles."

In Italy it inhabits the loftiest portions of the Alps and Apennines, but does not range further south. Salvadori thinks that in Central Italy and in Sicily and Sardinia it is wanting. It is met with in the mountains of the Tyrol and Austria; but Dr. Anton Fritsch states (J. f. O. 1871, p. 310) that it is with the greatest hesitation that he includes it amongst the birds of Bohemia. Fierling states that it occurs at Hohenelbe during severe winters; and Palliardi says, on the authority of the forester Lusek, that it appears annually during passage about Diedova and Planau, in the Chrudimer district, probably in company with Bramblings; but it appears probable that the Snow-Bunting has been mistaken for the present species. The Ritter von Tschusi-Schmidhofen informs me that it is resident in the mountains of Upper Austria, Styria, Kärnten, and Tyrol, in the winter season only coming down to the valleys. It has been observed near Salzburg on several occasions; and I may also add that it is said to occur in the Tatra Mountains.

As regards the occurrence of the present species in Eastern Europe I am rather at a loss to state any thing definite, owing to my non-success in obtaining specimens for examination, in spite of every endeavour to do so. There is no doubt that the Snow-Finch is found in the Caucasus, as well as in the peaks of Hermon and Lebanon in Palestine; but I cannot find any available specimen from the Caucasus, and Canon Tristram writes to me that his specimens from Hermon and Lebanon have been lent and lost. The Snow-Finch from Persia has been described by Pallas as distinct under the name of *Passer alpicola*; and it is uncertain whether the bird from the Caucasus and Palestine agrees with this form, or with the one which is found in Southern and Western Europe. I am indebted to Mr. Gould for the loan of his specimen of *Montifringilla alpicola*, a male in full summer plumage from Erzeroum; and on comparing this with the bird I have figured, I find that the eastern bird has a larger and stouter bill, and has the head ashy brown instead of clear ashy grey; but it does not differ in any respect, either in measurements or in coloration, from my specimens from the Swiss Alps; and I may add that these latter vary somewhat in the size of the bill. On the whole, judging from this single specimen, I am inclined to look on *M. alpicola* as merely a local form and a somewhat doubtful species, and should require a larger series to decide if it should be allowed to stand as a distinct species. Mr. Blanford, who has examined and compared two specimens of *M. alpicola* from Mazandaran, in the Elburz Mountains, writes as follows:—"This appears to me a good species, distinct from *M. nivalis*. Pallas, who received it from the Caucasus and 'the Ceraunian Mountains surrounding the Caspian,' states that it is distinguished by its long bill. Not only is the bill longer and larger than in *M. nivalis*, but it is black, whereas in the European Snow-Finch it is yellow in winter. In the Elburz specimens the black colour may have been assumed with the commencement of spring; but this is improbable, because the black of the throat is much concealed by white fringes, which would doubtless wear off in the nuptial plumage. Another important difference is that the bird of the Alps has the head cinereous in the male, even in winter plumage; in young males, even, it is very much more ashy than in the Elburz specimens.

"This Snow-Finch is a permanent inhabitant of the Elburz. The specimens obtained were shot in the snow by a collector whom Major St. John sent into the mountains in February. In summer it keeps to a considerable elevation. De Filippi found it at the base of Demavend; and I saw one flock near the coast of the Elburz, on the road from the Karij valley to Anán, at an

elevation of between 9000 and 10,000 feet above the sea. The birds were on very steep rocky ground; and I shot one, which rolled down some precipitous rocks; and despite a long search and much climbing on difficult ground, I was unable to find it." Dr. Carl Bolle states (J. f. O. 1854, p. 457) that one has been shot at Orotava, in the Canaries; but this must certainly be a mistake; perhaps *Plectrophanes nivalis* was taken for the present species.

I have not had an opportunity of watching this interesting bird in its native haunts, and must depend on the researches of the Alpine naturalists for particulars as to its habits. It frequents the sterile rocky portions of the mountains, where it runs amongst the stones in search of food, uttering its call-note, every now and then flying a short distance and settling again. It is lively and quick in its movements, and indefatigable in searching after the seeds and small insects on which it subsists. Now and then it will stand for a moment on any small eminence, slightly spread its wings, flirt its tail, and utter a tolerably loud note, which Bailly describes as resembling the syllables *puitt*, *puitt*, or *pitt*, *pitt*. When a storm breaks over the mountains the Snow-Finches take refuge amongst the crevices of the rocks, to reappear in their old haunts when it has passed.

Two broods are raised in the year—the first eggs being deposited about the middle of May, and the second sitting early in July, this latter being placed in a more elevated locality, usually close to the eternal snow. The female is the principal architect in the construction of the nest, which is placed in a chink in the rocks or amongst masonry. Every season, Bailly says, several pairs nest in the limestone in front of the Hôtel de la Poste, and on the borders of the lake, as also near the glaciers of Rouche, in the walls of the châlets, and of the houses of refuge which are placed along the principal road.

The female is said to undertake the cares of incubation, which extends over the space of eighteen days; and the young when hatched are most carefully tended by their parents. When quite young and until they get feathered they are fed with small insects, caterpillars, and the tender shoots of alpine plants, and later with seeds and buds. When able to take care of themselves, the young collect in flocks; and in August the old birds are in company with both their broods, often in tolerably large flocks.

I am indebted to Dr. Crowfoot, of Beccles, for a nest and eggs of this bird, taken at St. Gothard in June 1875. The nest is rather large, measuring $5\frac{1}{4}$ inches outside diameter, and $2\frac{1}{4}$ inches high, the cup measuring 3 inches diameter by $1\frac{3}{4}$ inch deep. It is a tolerably good structure, composed of dried grass-bents and fine rootlets, lined with wool, hair, and a few Ptarmigan-feathers, and a few bits of frayed string. The eggs, five in number, are pure white, and measure from $\frac{36}{40}$ by $\frac{25}{40}$ to $\frac{39}{40}$ by $\frac{28}{40}$ inch.

The specimens figured are an adult male in full summer dress and a nestling in the foreground, and a male in winter plumage in the background, these being the specimens described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, c, ♂, *d,* ♀. Switzerland, winter plumage (*W. Schlüter*). *e, f,* ♂ *ad.* Summer plumage, Switzerland (*Möschler*). *g, pull.* Switzerland (*Dr. Girtanner*).

